

Attachment A

Application

December 3, 2021

Subject: Large Master Plan Community (LMPC) application for Malibu LMPC

To: City of Herriman,

10-33-4: CONTENTS OF APPLICATION:

A. Any application for a “Large Master Planned Community” sub-zone shall include the following and such other materials as the City may require:

1. The proposed zone name of the sub-zone;

[Malibu LMPC](#)

2. A map of the property proposed for the sub-zone including topographical information at 2' contours or more detailed;

[See Exhibit ExM-1.](#)

3. The proposed sub-zone text specifying the permitted, conditional, and accessory uses to be more fully detailed in the Master Development Agreement; and

[Permitted Uses:](#)

- [Residential](#)
- [Recreational](#)

[Conditional Uses](#)

- [Commercial Neighborhood Markets](#)
- [Churches](#)
- [Charter Schools](#)
- [Day Care Facilities](#)
- [Shooting Range](#)

[Accessory Uses](#)

- [Municipal Facilities](#)
- [Schools](#)

4. A proposed Master Development Agreement. (Ord. 2021-22, 8-22-2021)

[See Attached MDA Document.](#)

10-33-5: MASTER DEVELOPMENT AGREEMENT:

C. Required Elements in Master Development Agreement:

1. A master plan of the project showing:

- a. The general areas of each intended use and the approximate intensity of each such use such as the approximate number of each type of residential or support use; each commercial, office or retail use;

[See Exhibit ExM-2 and C1](#)

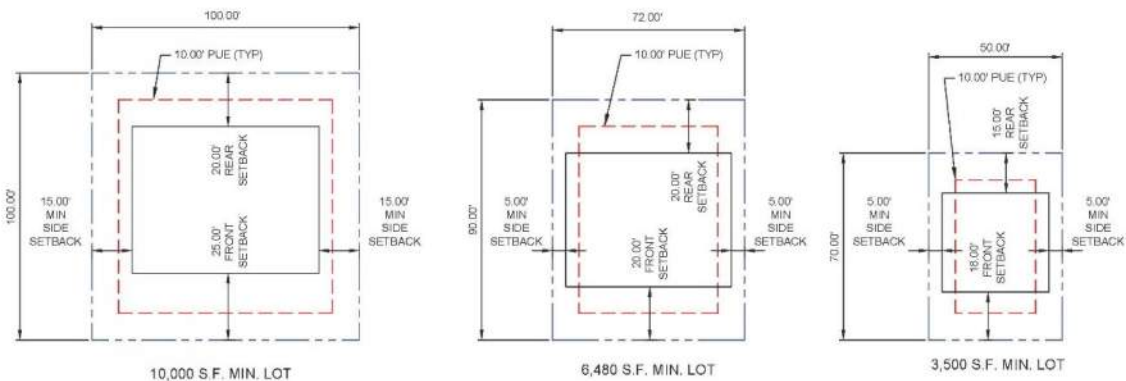
- b. The approximate location of major infrastructure such as main public roads, water tanks, utility lines;

[See Exhibits ExM-3, ExM-4, and ExM-5](#)

- c. The general location size and type of public or private parks, trails and open space;

[See Exhibit ExM-8.](#)

2. Proposed development standards for the various types of residential, commercial, retail office or other uses proposed including lot areas, dimensions, and setbacks;



3. Proposed design standards addressing building height, massing and orientation, common and private open space, natural resource protection, architectural design and materials, landscaping and buffering standards, parking and signage;

Community-Wide Design.

General Requirements

- The planning and design of the community should work with existing conditions such as topography, drainages, and stream corridors to provide a context sensitive plan.
- The planning and design of the community should be coordinated with adjacent properties to maximize street and trail connections to properties outside of the Malibu site.
- Neighborhoods should be designed to provide local access to adjacent neighborhoods, nearby destinations, transit, parks, schools and similar places by walking and bicycles.
- The location of any elementary, middle, or high schools, community centers, and recreation spaces should be coordinated with the appropriate public entities so as to be central gathering places, and shared-use facilities for the community, where possible.
- Thoughtful design solutions that enhance safety be implemented into the planning and design of Malibu. Some of the major strategies to enhance public safety may include:
 - (a) Design streets to increase pedestrian and bicycle traffic.
 - (b) Place windows overlooking sidewalks and parking areas.
 - (c) Use the fence most appropriate for the situation.
 - (d) Residential uses are encouraged to include porches, stoops, balconies, or other outdoor living spaces to increase eyes on the street.

Intent

Malibu intends to provide a wide range of commercial and residential building types in order to create a complete, mixed-use community. This section outlines the standards that will help make all building types support walkability and enhance livability in the community.

The purpose of this section is to provide general design criteria and guidance for the development of all neighborhoods within Malibu identifying those design elements that are deemed most critical to the overall success of the project. These guidelines are not intended to be restrictive, but to assist in the design,

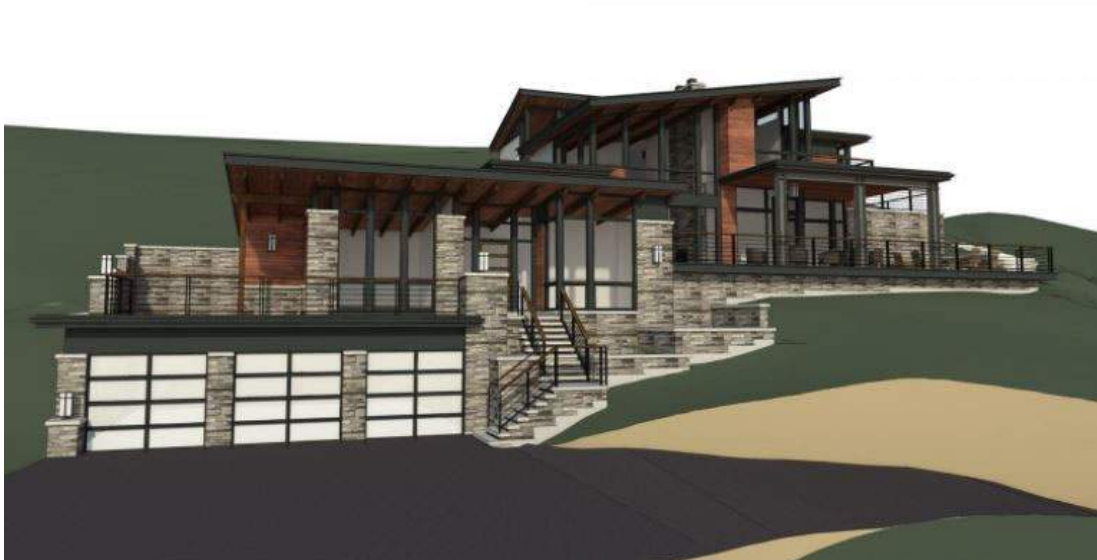
processing, and implementation of a higher level of design quality and direction.

The following aspects are of particular importance:

- Materials and/or Colors That Create Appropriate Diversity and Authenticity.
- Appropriate sensitivity to scale.
- Sophisticated selection and execution of details.
- Accurate and authentic interpretations of the characteristics for each architectural Style.
- Building forms and massing is authentic to each architectural style.
- Redefine the Role of the Street as a Pedestrian/Social Space.

Building Variety and Housing Types

Malibu will utilize varying architectural elements throughout the community to create dynamic and interesting Neighborhoods. Malibu will provide a range of residential housing types.





Building Height

Limit 2 story building height, (not including basement) measuring a maximum of 42' high from an imaginary line from the front of the house perpendicular to the midpoint of lot property line street frontage top back of curb elevation.

Building Massing

In order to achieve authenticity of style in materials, detail and execution, cost must be taken out of the basic structure of the house. Ironically, simple massing and roof forms are what often lead to the most authentic expression of style. The “Simple House” concept suggests that starting with simple structural forms and building masses can lead to the goals of achieving convincing authentic style and maintaining acceptable costs.

If the form of a building is viewed as a series of interlocking masses rather than a box, a more desirable aesthetic solution will occur. For example, the second-story can be set back in relation to the garage face, porch roof or first story wall plane below it. Where appropriate to style, stepping of second-story mass may be used to improve the street scene. Certain styles are based on a box-like, two-story building mass. Where this is the case, added attention such as single-story elements balconies, enhanced window treatments, massing voids, plane breaks, and other articulation may be used to provide heightened interest and variety for such styles.

Building Orientation

Thoughtful site planning maintains and enhances the character of the arid mountain desert and benefits residents and visitors. Planning should ensure that

- Site disturbance is minimized and natural land forms are protected;
- Slopes of 30% or greater are left undisturbed;
- Buildings and improvements are clustered, so undisturbed, natural open space is maximized and views are preserved;
- Natural open space can be protected during construction;
- Architecture and site features are compatible with the natural arid mountain desert environment and follow the natural topography of the land so the need for grading is reduced;
- Site layout options are evaluated which utilize natural or man-made washes that creates a natural setting for storm water flows, allows for concentrations of vegetation, rain water harvesting and provides a setting for pedestrian circulation with shaded places;
- Views of open space and mountains are maximized and established view corridors are respected;
- Building placement creates the opportunity for framed views;
- Building placement and site design reduces summer heat gain and winter heat loss;
- Useable public spaces are designed to take advantage of the climate with relief from the heat in the warm months and open to warmth during the cool months.

Common and Private Open Space

Open space should be undisturbed by the physical and visual impact of fences and walls, as much as possible. Ensure that

- For slopes of sixty degrees (60°) and less, mortar-free stone retaining walls using irregularly shaped native boulders are used, subject to structural and slope stability design considerations and landscaping of the slope shall be provided to produce a more natural appearance;
- Vertical retaining walls, if necessary, have a maximum height of five feet (6');;
- For grade changes of more than five feet (6') a series of terraces is used and each terrace has a four-foot (4') minimum width;
- A four-foot (4') landscaped strip is provided at the top of retaining walls between the wall and building or structure;
- As a means of preserving the natural arid mountain desert character, views, wildlife corridors, and habitat, perimeter walls are constructed only where required by Code;
- Perimeter walls are designed to match the character and appearance of the development theme;
- Perimeter walls are designed and constructed in a height and style which preserves arid mountain desert vistas to the extent possible;
- Perimeter walls and screen walls reflect changes in the topography;
- The height of walls is measured from the original grade;



Natural Resource Protection

The arid mountain desert region in the Wasatch Basin area has a unique, sensitive, and diverse ecosystem. These systems work in close harmony to allow plants and animals to survive – and even flourish – in a harsh environment. Similarly, the built environment needs to carefully consider the interactions and interrelatedness of the parts to ensure the whole provides a livable and sustainable system that is compatible with its the arid mountain desert environment.



Architectural Design and Materials

Doors, Porches, and Entrances

Front entry doors should be made of high quality material and should be a significant element within the front facade of the home and designed to be consistent with the style of the home.

Front porches and covered terraces should be considered outdoor rooms and key elements for architectural composition. Significant front porches, entry courts, stoops and covered terraces are encouraged and should strive to achieve an appropriate size and grade relationship to the street.

Windows

Windows should be appropriately scaled to the massing and architectural style of the home. Windows should primarily be vertical and rectangular in shape, but all windows should be consistent with the home's architectural style. Energy efficient windows are strongly encouraged. Windows should be recessed when possible and encourage natural light and ventilation.

Residential Building Materials

Exterior materials should utilize natural materials and a variety of complimentary colors and accents consistent with the architectural style of the home. Design, textures and materials should be visually interesting and cohesive.

Front Elevations should have 3 architectural features minimum. Side Elevations must have 2 Architectural Elements.

Rear Elevation must have 2 Architectural Elements

Architectural Elements may include:

- Stone
- Stucco Brick
- Hardie board (Each configuration may be counted as an element) Shake Shingles Shutters
- Corbels Trellises
- Window trim (must be a contrasting color to walls)

Architectural Elements may include:

Structural elements such as fireplace pop-outs, garages and vents are NOT considered architectural elements. Aluminum and or vinyl siding is prohibited

Side elevations consisting of full stucco must have a minimum 18-inch return of all front elevation materials but shall return back to the fence line at a minimum.

Street facing side elevations must have the same treatment as the front elevation and/or be fenced before occupancy. Materials must wrap back to the fence line at a minimum.

Exterior columns, braces and supports should be proportional to the massing elements they are associated with and appear to be visually proportional with what they are supporting.

ARC may consider other architectural features upon request from the builder.

Building Colors

For all architectural styles, the exterior colors should be a coordinated palette of colors appropriate to the style. Overly bright and dramatic colors are prohibited, unless approved by the ARC for small accent areas, such as a front door application.

Sustainability

Water Conservation. Buildings are encouraged to be designed and constructed to use water-saving strategies, such as:

- (a) Water conserving appliances, toilets, plumbing and fixtures that possess a WaterSense label from the U.S. Environmental Protection Agency, and piping to facilitate future grey-water systems, etc.

Energy Conservation. Buildings are encouraged to be designed and constructed to use energy-saving strategies, such as:

- (b) Energy efficient windows which exceed prescriptive requirements of the 2015 International Energy Conservation Code (IECC) should be used to reduce heat loss in the winter and heat gain in the summer.
- (c) Energy efficient furnaces, air conditioners, water heaters, and dryers should be used. All dwelling units and buildings should, at minimum, be constructed with Ultra-low NOx water heaters that are Energy Star certified and furnaces that meet a 97% AFUE

(Annual Fuel Utilization Efficiency) rating.

- (d) Airtight and well-insulated building envelopes to reduce mechanical loads and facilitate cost savings from needing smaller mechanical/HVAC systems. The air tightness level and wall insulation should exceed the prescriptive requirements of the 2015 IECC (when the “building envelope” is airtight and well-insulated a smaller mechanical/HVAC system is required).
- (e) Building materials that have a low embodied energy rating, such as locally produced materials, materials with a higher recycled content, and materials that require less energy to produce or manufacture.

Changes to the Sustainability standards in this section 6.12 may be made by the Administrator based on modern sustainability principles or the Administrator may transfer the decision to Planning Commission for approval.

Parking Standards

Parking areas and drive aisles should

- Follow the natural terrain to reduce the need for retaining walls;
- Follow on a softer, curvilinear form, if possible;
- Be broken into smaller areas and distributed throughout the site;
- Be screened by devices that blend into the natural environment, such as berms, or walls that are constructed of stone or integral color split face block;
- Utilize paving materials of light earth tones and approved alternative paving materials, such as permeable paving.

Signage Standards

Signage shall be an integral component of the project and consistent with the design theme. The design should

- provide a coordinated system of way-finding elements;
 - express a creative and artistic composition;
 - be integrated or featured in the architectural composition;
 - utilize colors that complement the desert tones used in the project;
- e. utilize preferred “halo illuminated” signage or signage with an opaque background.



4. Proposed process for implementing, administering, enforcing and making modifications to the proposed project;

[See attached MDA Document.](#)

5. The length of the term of the Master Development Agreement;

[See attached MDA Document.](#)

6. Processes for amending the Master Development Agreement;

[See attached MDA Document.](#)

7. A provision ensuring that the City cannot be held liable for any damages arising out of the Master Development Agreement;

[See Attached MDA Document.](#)

8. Any other provisions as required by the City Council master development agreement policy.

9. Any other items that the City Attorney deems appropriate for consideration by the City. (Ord. 2021-22, 8-22-2021)

Thank you,

Reid Dickson, PE

801-541-3040

dushane@infinityutah.com

www.infinityutah.com

2975 Executive Parkway

Suite 300

Lehi, Utah 84043



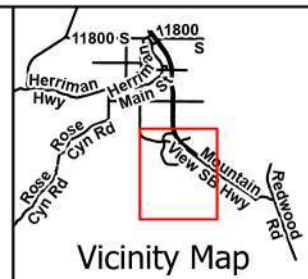
Attachment B

Vicinity Map

Laguna/ Malibu Development

"Herriman Preserve"

4461 W Juniper Crest Road

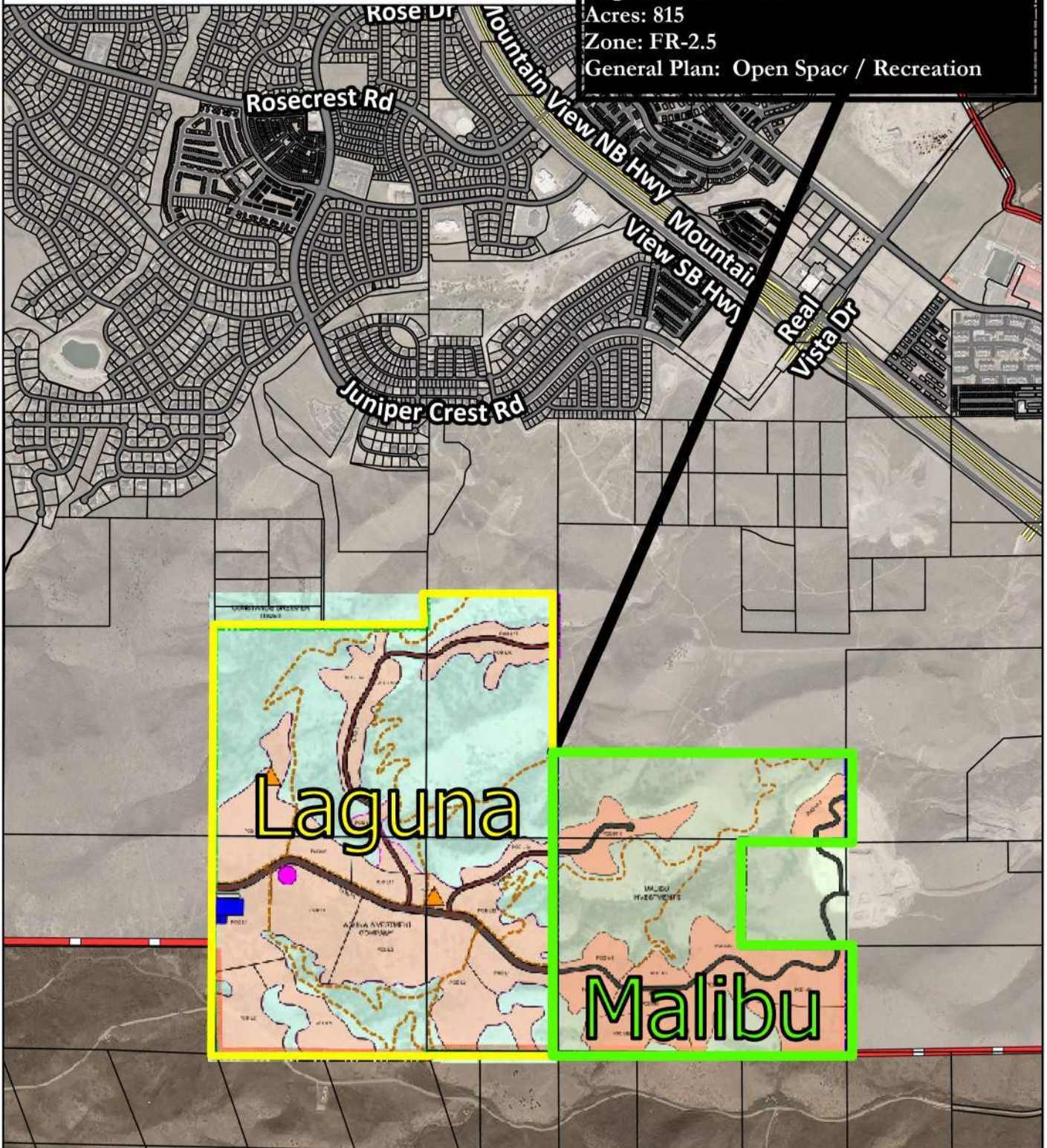


Laguna Malibu LMPC

Acres: 815

Zone: FR-2.5

General Plan: Open Space / Recreation



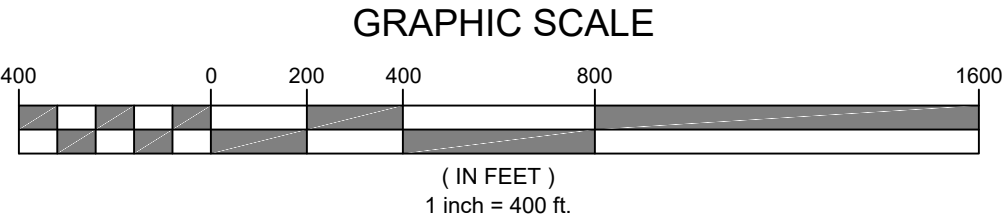
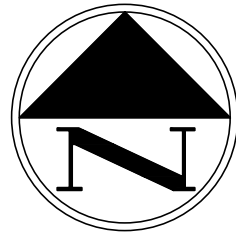
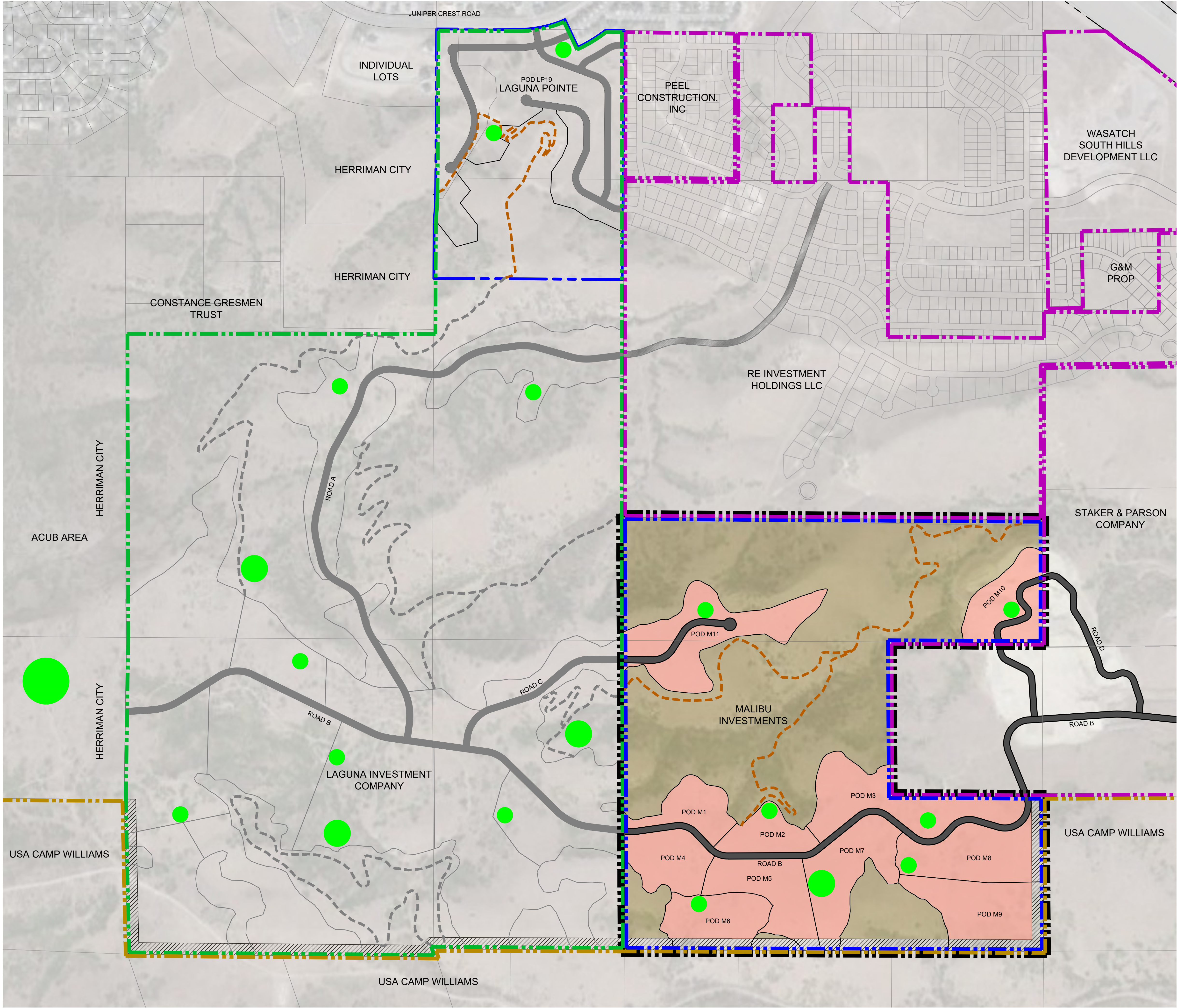
Herriman Planning & Zoning

Feet
0 470 940 1,880 2,820 3,760



Attachment C
Draft MDA Documents and Design Guidelines

P:\Shared Files\Projects\2400 - Malibu\004 Master Plans\00-Cadd\04-Exhibits\EC-8 Parks & Open Space Plan.dwg December 03, 2021 - 3:21pm



LEGEND

- MOUNTAIN VIEW CORRIDOR (UDOT)
- RIGHT-OF-WAY
- DEVELOPMENT AREA
- PROJECT BOUNDARY
- MALIBU BOUNDARY
- LAGUNA BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- CAMP WILLIAMS
- PARCEL LINE WORK BASED ON COUNTY ASSESSOR MAPS, APPROXIMATE LOCATION, FOR PLANNING PURPOSES ONLY
- TRAILS
- PRIVATE LOCAL PARK
- PRIVATE AREA PARK
- PUBLIC REGIONAL PARK
- ACUB BUFFER
- OPEN AREA

- NOTES:
- PARCEL LINES BASED ON COUNTY TAX RECORDS DATED 2018.
 - TOPOGRAPHY DERIVED FROM HERRIMAN CITIES ARCGIS.
 - AERIAL IMAGE FROM GOOGLE EARTH.



No.	DESCRIPTION	BY	DATE

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DRAWN BY: RJF	CHECKED BY: RHD
DATE: 11.01.2021	PROJECT No: -

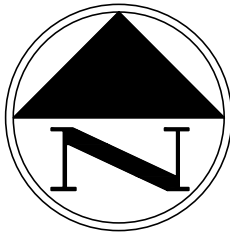
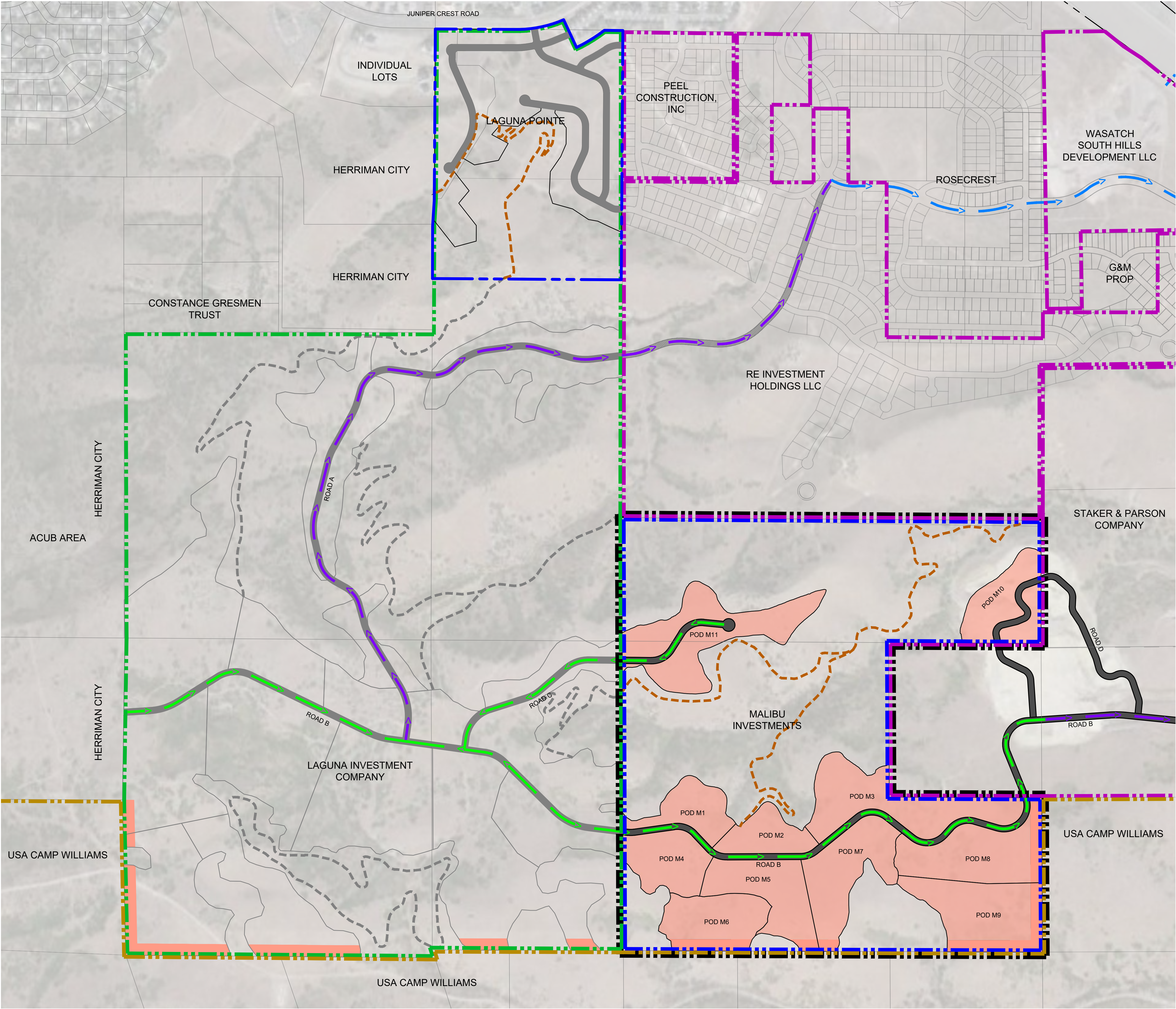


MALIBU / LAGUNA MASTER PLAN

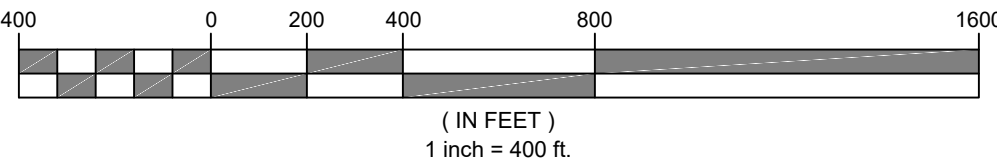
MALIBU PARKS, TRAILS, & OPEN SPACE PLAN

HERRIMAN, UTAH

P:\Shared Files\Projects\2400 - Malibu\00-Master Plans\00-Cadd\04-Exhibits\ExC-4 Overall Sewer Plan.dwg December 03, 2021 - 2:56pm



GRAPHIC SCALE



LEGEND

- MOUNTAIN VIEW CORRIDOR (UDOT)
- RIGHT-OF-WAY
- DEVELOPMENT AREA
- OVERALL PROJECT BOUNDARY
- MALIBU BOUNDARY
- LAGUNA BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- CAMP WILLIAMS
- PARCEL LINE WORK BASED ON COUNTY ASSESSOR MAPS, APPROXIMATE LOCATION, FOR PLANNING PURPOSES ONLY
- PROPOSED 12" SANITARY SEWER LINE EXTENSION
- PROPOSED 10" SANITARY SEWER LINE EXTENSION
- PROPOSED 8" SANITARY SEWER LINE EXTENSION

- NOTES:
- PARCEL DATA WAS ACQUIRED FROM SALT LAKE COUNTY ASSESSOR WEB PAGE.
 - PARCEL LINE WORK WAS ACQUIRED FROM THE UTAH ARCGIS WEBSITE AND IS NOT SURVEYED.
 - EXISTING SEWER LINE DATA WAS ACQUIRED FROM SOUTH VALLEY SEWER DISTRICT.



No.	DESCRIPTION	BY	DATE

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DRAWN BY: RJF	CHECKED BY: RHD
DATE: 11.01.2021	PROJECT No: -



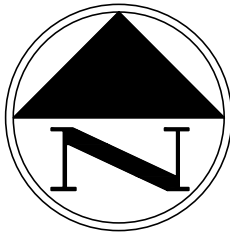
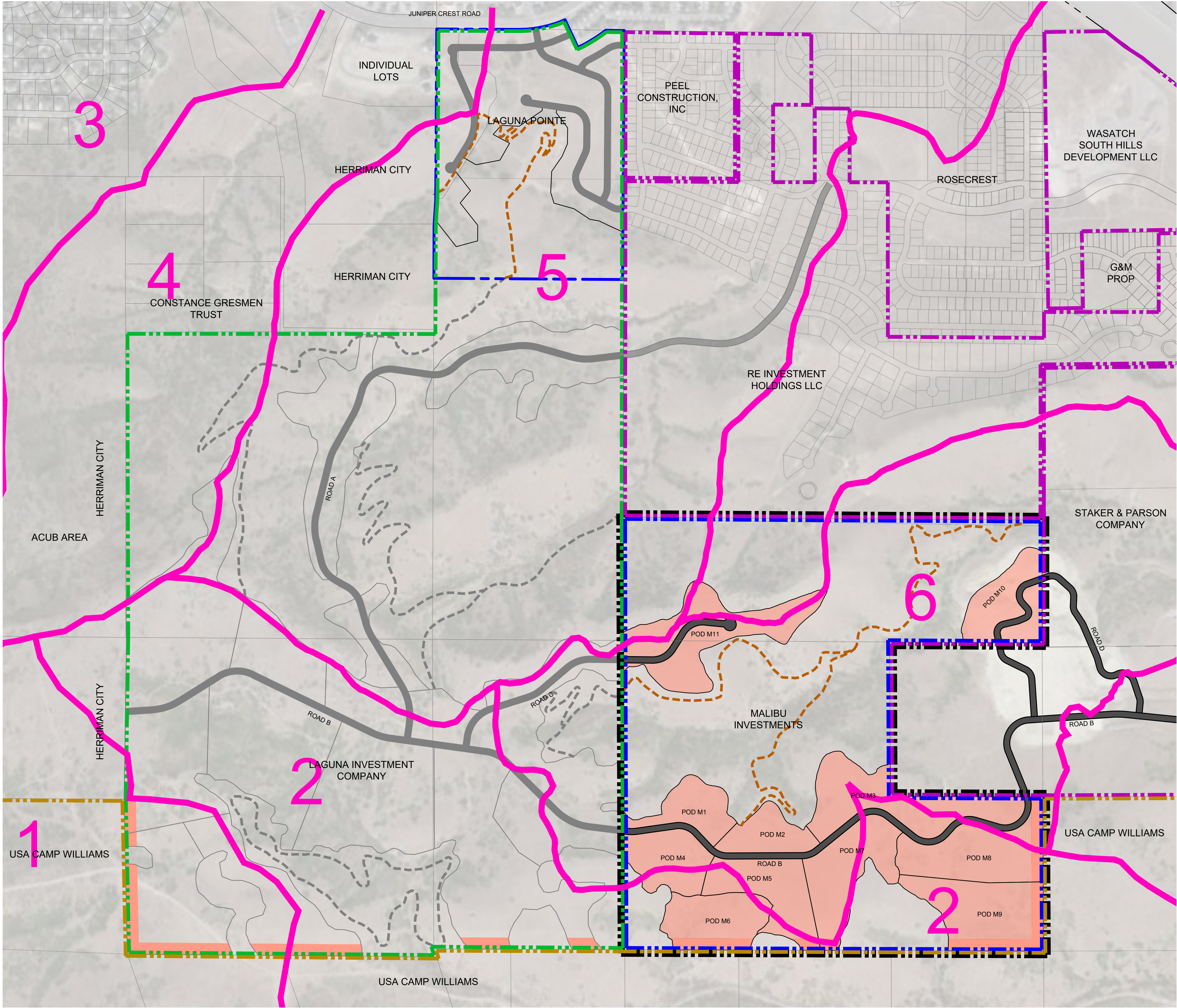
2975 Executive Parkway, Suite 300
Lehi, Utah 84043 • Tel: 801.541.3040

MALIBU / LAGUNA MASTER PLAN
MALIBU SEWER PLAN

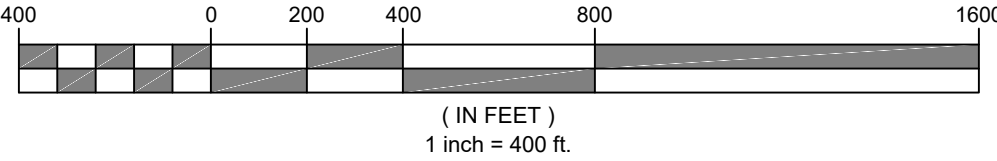
HERRIMAN, UTAH

SHEET
ExM-4

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GRAPHIC SCALE



LEGEND

- MOUNTAIN VIEW CORRIDOR (UDOT)
- RIGHT-OF-WAY
- DEVELOPMENT AREA
- OVERALL PROJECT BOUNDARY
- MALIBU BOUNDARY
- LAGUNA BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- CAMP WILLIAMS
- PARCEL LINE WORK BASED ON COUNTY ASSESSOR MAPS, APPROXIMATE LOCATION, FOR PLANNING PURPOSES ONLY
- ROAD CULVERT
- DETENTION BASIN

- NOTES:
- PARCEL LINES BASED ON COUNTY TAX RECORDS DATED 2018.
 - TOPOGRAPHY DERIVED FROM HERRIMAN CITIES ARCGIS.
 - AERIAL IMAGE FROM GOOGLE EARTH.



No.	DESCRIPTION	BY	DATE

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SCALE (VERT): -
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PROJECT No: -



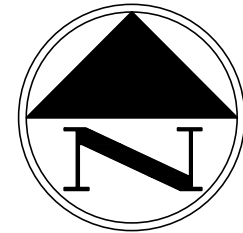
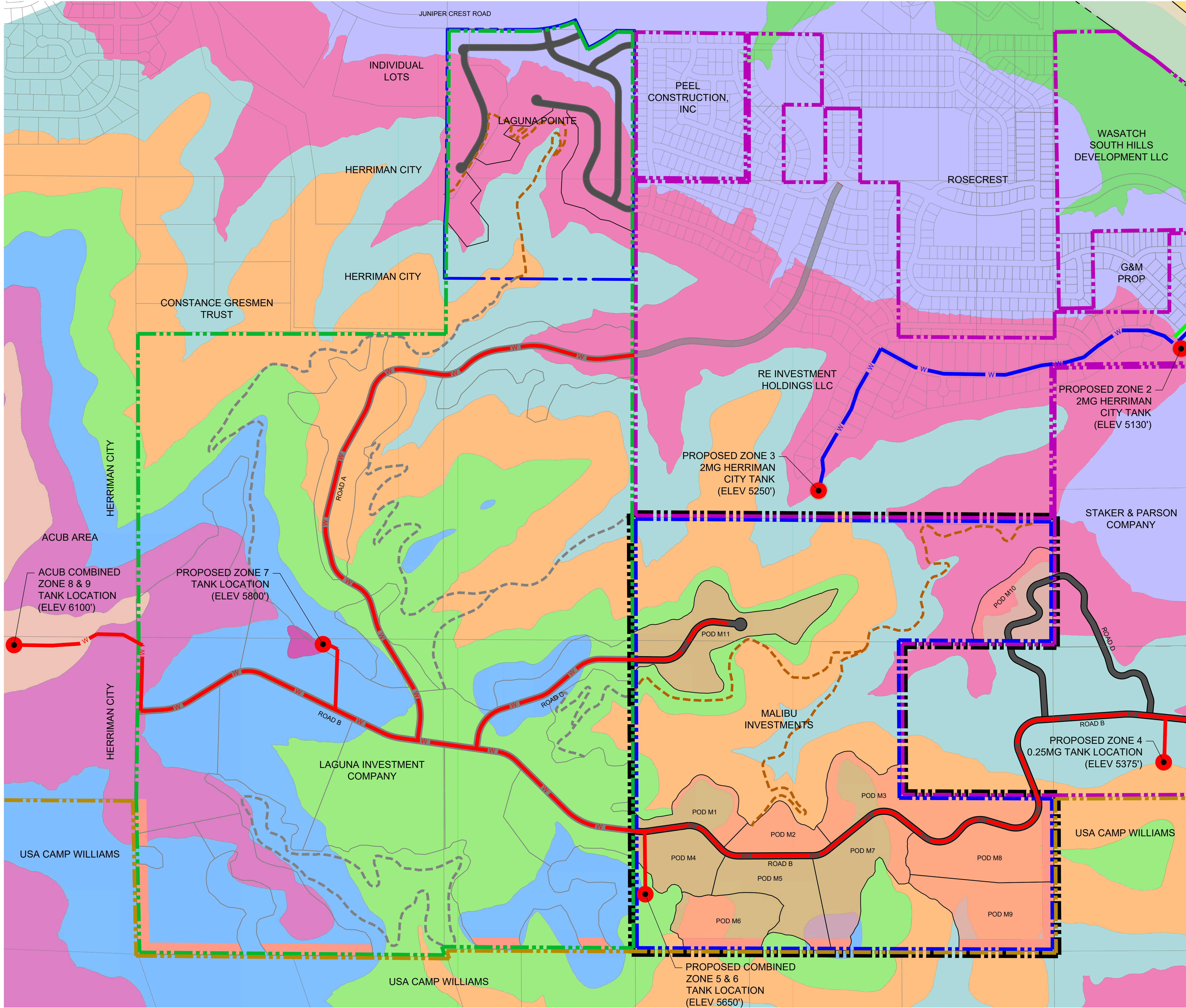
2975 Executive Parkway, Suite 300
Lehi, Utah 84043 • Tel: 801.541.3040

MALIBU / LAGUNA MASTER PLAN
MALIBU DRAINAGE PLAN

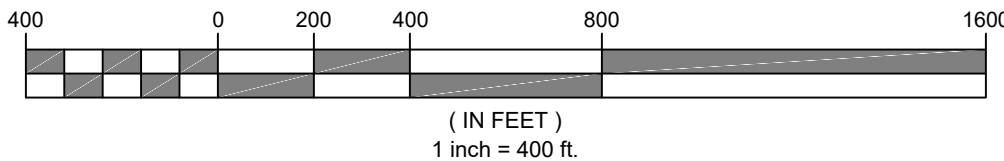
HERRIMAN, UTAH

SHEET
ExM-5

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GRAPHIC SCALE



LEGEND

- MOUNTAIN VIEW CORRIDOR (UDOT)
- RIGHT-OF-WAY
- DEVELOPMENT AREA
- OVERALL PROJECT BOUNDARY
- MALIBU BOUNDARY
- LAGUNA BOUNDARY
- ADJACENT PROPERTY BOUNDARY
- CAMP WILLIAMS
- PARCEL LINE WORK BASED ON COUNTY ASSESSOR MAPS, APPROXIMATE LOCATION, FOR PLANNING PURPOSES ONLY
- PROPOSED TANK LOCATION
- PROPOSED ZONE 2 WATER TRUNKLINE
- PROPOSED ZONE 3 WATER TRUNKLINE
- PROPOSED ZONE 4 WATER TRUNKLINE
- PROPOSED ZONE 5 & 6 WATER TRUNKLINE
- PROPOSED ZONE 7 WATER TRUNKLINE
- PROPOSED ZONE 8 & 9 WATER TRUNKLINE
- TANK ELEVATION CONTOUR

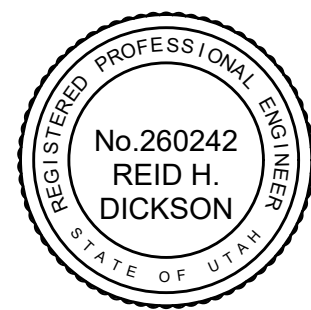
WATER PRESSURE ZONES

- ZONE 1
4710-4850
- ZONE 2
4850-4990
- ZONE 3
4990-5120
- ZONE 4
5120-5275
- ZONE 5
5275-5390
- ZONE 6
5390-5550
- ZONE 7
5550-5700
- ZONE 8
5700-5850
- ZONE 9
5850-6000
- ZONE 10
6000-6124

LENGTH FROM EXISTING HERRIMAN CITY TANK TO TANK #1
APPROXIMATELY 8,400 LF

NOTES:

- PRESSURE ZONES ELEVATIONS PER HERRIMAN CITY CULINARY MASTER PLANNING MAP.
- PRESSURE ZONE DELINEATION HAS BEEN UPDATED TO CORRELATE WITH RECENT AERIAL TOPO SURVEY AND FUTURE PROPOSED GRADING.
- ERC = EQUIVALENT RESIDENTIAL CONNECTION. EACH SINGLE FAMILY HOME IS AN ERC.
- ASSUMING 0.125 ACRES OF IRRIGATED AREA PER ERC.
- DEFINED AS 400 GALLONS PER ERC. (R309-510-8 (2) (B))
- DEFINED AS 2,848 GAL PER IRRIGATED AC. (R309-510-8 (2) (C))
- BASED ON 1,500 GPM FIRE FLOW FOR 120 MINUTES.
- 25% OF EQUALIZATION AND OUTDOOR STORAGE. (HERRIMAN CITY MASTER PLAN)
- COST INCLUDES RESERVOIR (\$2.50/GAL), WATERLINE (\$80/LF) & PUMP STATION (\$150,000)



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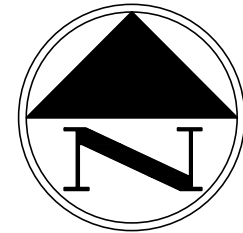
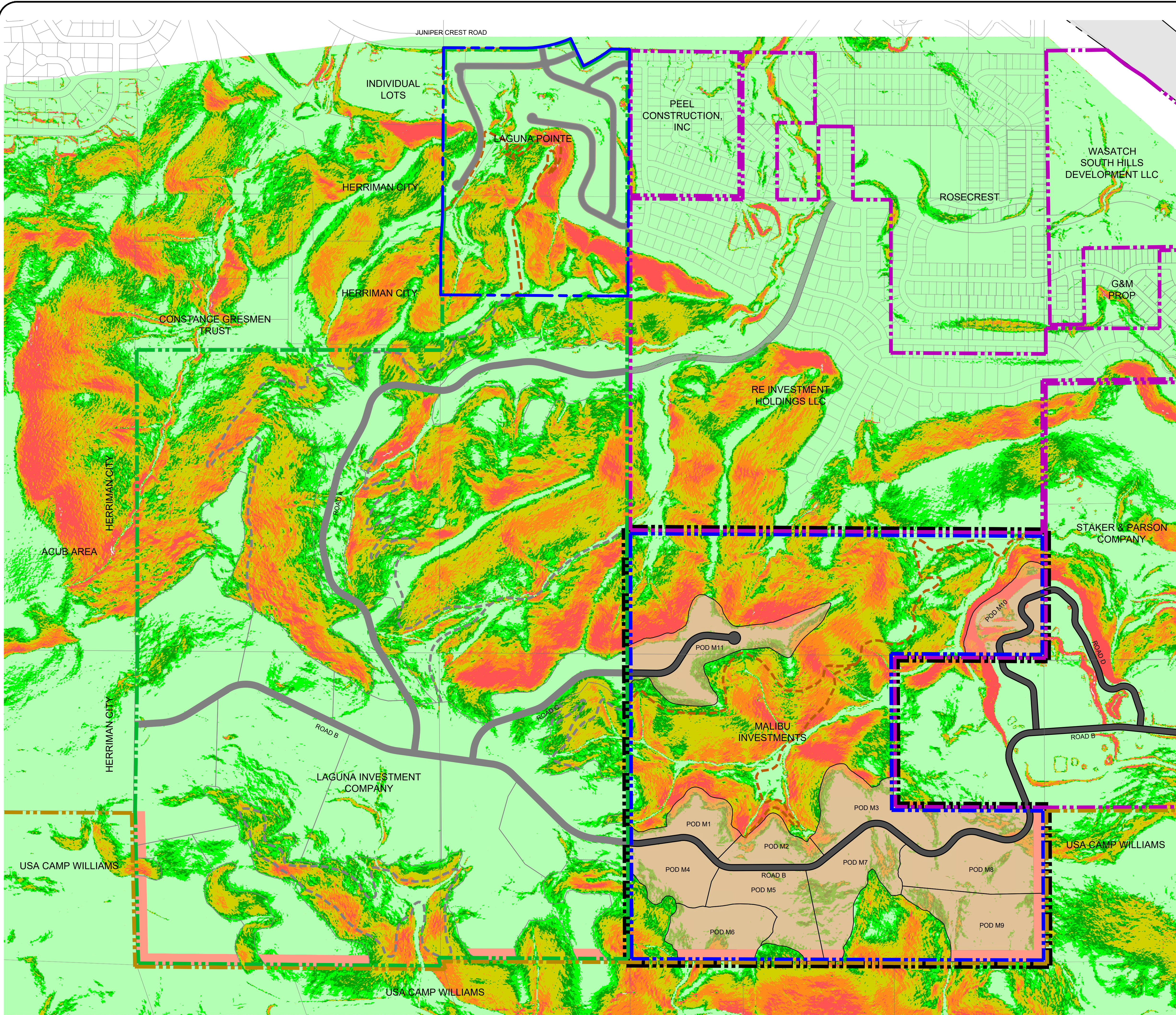
2975 Executive Parkway, Suite 300
Lehi, Utah 84043 • Tel: 801.541.3040

MALIBU / LAGUNA MASTER PLAN
MALIBU WATER PLAN

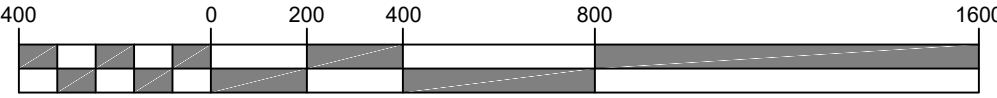
HERRIMAN, UTAH

SHEET
ExM-3

P:\Shared Files\Projects\2400 - Malibu\004 Master Plans\04-Cadd\04-Exhibits\EO-1 Overall Slope Plan.dwg December 03, 2021 - 2:17pm



GRAPHIC SCALE



LEGEND

	MOUNTAIN VIEW CORRIDOR (UDOT)
	RIGHT-OF-WAY
	DEVELOPMENT AREA
	PROJECT BOUNDARY
	MALIBU BOUNDARY
	LAGUNA BOUNDARY
	ADJACENT PROPERTY BOUNDARY
	CAMP WILLIAMS
	PARCEL LINE WORK BASED ON COUNTY ASSESSOR MAPS, APPROXIMATE LOCATION, FOR PLANNING PURPOSES ONLY

Slopes Table			
ZONE	MINIMUM SLOPE	MAXIMUM SLOPE	COLOR
1	0.0%	30.0%	
2	30.0%	35.0%	
3	35.0%	40.0%	
4	40.0%	50.0%	
5	50.0%	60.0%	
6	60.0%	100.0%	

- NOTES:
1. PARCEL LINES BASED ON COUNTY TAX RECORDS DATED 2018.
 2. TOPOGRAPHY DERIVED FROM HERRIMAN CITIES ARCGIS.



No.	DESCRIPTION	BY	DATE

SCALE (HORIZ): 1"=400'
SCALE (VERT): -
DRAWN BY: RJF
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PROJECT No.: -



2975 Executive Parkway, Suite 300
Lehi, Utah 84043 • Tel: 801.541.3040

MALIBU / LAGUNA MASTER PLAN
MALIBU SLOPE ANALYSIS

HERRIMAN, UTAH

SHEET
ExM-1

WHEN RECORDED, RETURN TO:

Herriman City Recorder
5355 West Herriman Main Street
Herriman, Utah 84096

MASTER DEVELOPMENT AGREEMENT

FOR

MALIBU

DRAFT 12/03/21

TABLE OF CONTENTS

[TO BE CREATED LATER]

MASTER DEVELOPMENT AGREEMENT FOR MALIBU

THIS MASTER DEVELOPMENT AGREEMENT is made and entered into effective as of the 29th day of September 2021, by and between HERRIMAN CITY, a political subdivision of the State of Utah, by and through its City Council, AAA, a Utah limited liability company and YYY, LLC, a Utah limited liability company.

RECITALS

A. Owner is the current owner of the Property, and Master Developer has an option to acquire and develop the Property.

B. Owner, Master Developer, and the City desire that the Property be developed in a unified and consistent fashion pursuant to this MDA.

C. By entering into this MDA, the City is able to facilitate the orderly development of the Planned Community within the boundaries of the City and thereby capture substantial one-time funds as well as ongoing property and sales tax revenues to support the day-to-day operations of the City.

D. By engaging in negotiations with Owner and Master Developer for the annexation and development of the Planned Community, the City has also been able to secure fully developed local and regional parks and open space, conveniently and strategically located within at least ½ mile of each residential unit, that contribute to the overall quality of life and enjoyment recognized by the residents the City and surrounding areas.

E. The City also acknowledges that by entering into this MDA, Owner and Master Developer shall receive considerable benefits.

F. Specifically, Master Developer will have substantial financial assistance in the form a public infrastructure districts to help finance the design and construction of public infrastructure within the Planned Community.

G. By entering into this MDA, Master Developer will also receive assurances as to the Development Application approval process, thereby providing Master Developer with certain guarantees as to the timely and orderly development of the Planned Community.

H. The Parties acknowledge that development of the Property pursuant to this MDA will result in significant planning and economic benefits to the City and its residents by, among other things, requiring orderly development of the Property as a master planned community and increasing sales tax and other revenues to the City based on improvements to be constructed on the Property by the Master Developer.

I. Development of the Property pursuant to this MDA will also result in significant benefits to Owner and Master Developer by providing assurances to Owner and Master Developer that Master Developer will have the ability to develop the Property in accordance with this MDA.

J. The City assigned the Property zones pursuant to the City's Large Project Master Planned Community Zoning tool and as depicted on the Land Use Master Plan.

K. The Land Use Master Plan, along with the Design Guidelines, sets forth those land use classifications, residential and commercial densities, and development locations as are permitted under this MDA for the Planned Community.

L. This MDA identifies the standards and procedures that will be applied to the required administrative approvals contemplated in connection with the future development of the Planned Community, as well as the construction of certain improvements of benefit to the Planned Community and to address requirements for certain community benefits.

M. The City has established the Planned Community under the provisions of the City's Vested Laws for the purpose of implementing development standards and processes that are consistent therewith. In doing so, the City found that the Planned Community is vested to proceed under the City's Vested Laws, subject to the limitations outlined herein.

N. The City Council, acting pursuant to its authority under the Act and the City's Vested Laws, has made certain determinations with respect to the proposed Planned Community, as a master planned community, and in the exercise of its legislative discretion has elected to approve the use, density, and general configuration of the Planned Community set forth in the Land Use Master Plan through the negotiation, consideration and approval of this MDA after all necessary public hearings and recommendations from the Planning Commission.

O. The Parties, having cooperated in the drafting of this MDA, understand and intend that this MDA is a "development agreement" within the meaning of, and is entered into pursuant to, the terms of Utah Code Ann. § 10-9a-103(12) (2021).

P. Furthermore, the Parties desire to enter into this MDA to specify the rights and responsibilities of Owner and the Master Developer to develop the Property as expressed in this MDA and the rights and responsibilities of the City to allow and regulate such development pursuant to the requirements of this MDA.

Q. Finally, the Parties recognize and acknowledge the extensive public process by which this MDA, its exhibits, and the various issues addressed therein have come to be. This public process has included the statutorily required public hearings as well as the many other non-mandatory public hearings, public comments, community meetings, and opportunities for public feedback (both virtually and in-person) that have been fostered by the City.

NOW, THEREFORE in consideration of agreements and obligations set forth below, and in reliance upon the recitals set forth above, which are incorporated as part of this Agreement, the City, Owner, Special Owner, and the Master Developer hereby agree as follows:

AGREEMENT

SECTION 1 DEFINITIONS

As used in this MDA, the words and phrases specified below shall have the following meanings:

1.1. **Act** means the Municipal Land Use, Development, and Management Act, UTAH CODE ANN. §§ 10-9a-101, *et seq.* (2021).

1.2. **Administrator** means the Herriman City Manager or their designee unless some other

person or position is appointed by resolution of the Council to serve as the Administrator of this MDA.

1.3. **Administrative Action** means and includes the actions related to Development Applications that may be approved by the Administrator as provided in Exhibit “F”.

1.4. **Administrative Modifications** means and includes any amendment, modification, or supplement to this MDA that may be approved by the Administrator as provided in Section 7.1.1.

1.5. **Applicant** means any person or entity making a Development Application for a portion of the Planned Community.

1.6. **Architectural Review Committee (“ARC”)** means the architectural review committee created by the XXX Homeowner’s Association.

1.7. **Building Permit** means a permit issued by the City to allow construction, erection, or structural alteration of any building, structure, or private, public, or Project Infrastructure on any portion of the Planned Community, or to construct any off-site infrastructure within the City’s jurisdiction consistent with the International Building Code, International Fire Code and/or the City’s Vested Laws.

1.8. **Capital Roads** means those roads identified in the City’s transportation master plan within the Planned Community.

1.9. **City** means Herriman City, a city of the third class located in the County.

1.10. **Commercial Development** means the development of commercial uses as identified in the Design Standards.

1.11. **Council** means the elected City Council of the City.

1.12. **County** means Salt Lake County, a political subdivision of the State of Utah.

1.13. **City’s Future Laws** means the ordinances, policies, rules, regulations, standards, procedures and processing fee schedules of the City which may be in effect as of a particular time in the future when a Development Application is submitted for a part of the Planned Community and which may or may not be applicable to the Development Application depending upon the provisions of this MDA.

1.14. **City’s Vested Laws** means the ordinances, policies, standards, and procedures of the City related to zoning, subdivisions, development, public improvements, and other similar or related matters that were in effect as of the Effective Date of this MDA, as more particularly described in the attached Exhibit “E”.

1.15. **Default** means a material breach of this MDA as more fully specified in Section 9.18, below.

1.16. **Design Guidelines** means the general standards for design of the building for the Intended Uses and Project Infrastructure as more fully specified in the attached Exhibits, and to the extent not established therein, those standards established consistent with the City’s Vested Laws, the general policies outlined in this MDA, and the approved Zoning Plan.

1.17. **Detached Single Family Dwelling Unit** means a building arranged or designed to be occupied by one family, the structure having only one dwelling unit and not attached to another dwelling unit.

1.18. **Development Application** means an application to the City for development of a portion of the Planned Community including a Preliminary Plat, Final Plat, a Building Permit, or any other permit, certificate or other authorization from the City for development of the Planned Community.

1.19. **Development Report** means a report containing the information specified in Exhibit “G” submitted to the City by Master Developer, or any Subdeveloper pursuant to an authorized assignment hereunder, for the development of any Parcel or Subdivision or concurrent with any Development Application.

1.20. **Extractable Natural Materials** means any rock, sand, or gravel products (but excluding any other underground material or other minerals that may be discovered on the Property) which may be used by the Master Developer, and/or its agents, successors, assigns, tenants, guests, and invitees as more fully specified herein.

1.21. **Final Plat** means the recordable map or other graphical representation of land prepared in accordance with Utah Code Ann. § 10-9a-603, (2021), and approved by the City effectuating a Subdivision of any portion of the Property.

1.22. **Impact Fees** means those fees, assessments, or payments of money which may be imposed by the City, or any local or special service district as specified in the Utah Impact Fees Act, Utah Code Ann. §§ 11-36a-101, *et seq.*, (2021).

1.23. **Individually Platted Dwelling Unit** means an RDU whose boundaries are drawn on a subdivision or condominium plat, such as Detached Single Family Dwelling Units, town homes, and condominiums.

1.24. **Intended Uses** means the use of all or portions of the Planned Community for single-family and multi-family residential units, hotels, restaurants, public facilities, businesses, commercial areas, professional and other offices, services, parks, trails and other uses as more fully specified in the Zoning Ordinance, the Master Plan, and this MDA.

1.25. **Land Use Master Plan** means the layout set forth in Exhibit “B”, which provides for the use, density and general locations of the Intended Uses in the development of the Planned Community.

1.26. **Legislative Amendment** means and includes any amendment, modification, or supplement to this MDA that must be approved by the Planning Commission or City Council as provided in Section 7.1.2.

1.27. **Master Developer** means YYY, LLC, a Utah limited liability company and its related entities, assignees, or transferees as permitted by this MDA.

1.28. **Maximum Residential Units** means the development on the Property of three hundred fifty four (354) Residential Dwelling Units.

1.29. **MDA** means this Master Development Agreement including all of its Exhibits.

1.30. **Notice** means any notice to or from any party to this MDA that is either required or permitted to be given to another party.

1.31. **Malibu Homeowner’s Association (“HOA”)** means a homeowner’s association created

under Utah Law to perform the functions of a homeowner's association.

1.32. **One-Time Contract Fee** means a fee paid by the Developer, Subdeveloper, or a third party to the City upon issuance of a building permit.

1.33. **Open Space** means a use of land for active or passive, public or private, outdoor space, including such uses as parks, plazas, greens, playgrounds, or community gardens. Such land is preserved for the purpose of conservation, preservation, agriculture, resource enhancement, recreation, enhancing value to the public of adjacent parks or preserves, or otherwise providing a buffer to adjacent properties.

1.34. **Owner** means AAA, L.L.C., a Utah limited liability company and its related entities, assignees, or transferees as permitted by this MDA.

1.35. **Parcel** means an area identified for development of a particular type of Intended Use that is not an individually developable lot.

1.36. **Party or Parties** means, collectively, the City, Owner, and Master Developer.

1.37. **Phase** means the development of a given portion of the Planned Community at a point in a logical sequence as determined by Master Developer and agreed to by the City.

1.38. **Planned Community** means the development to be constructed on the Property pursuant to this MDA including all of the Intended Uses and the Project Infrastructure.

1.39. **Planning Commission** means the City's Planning Commission established by the Zoning Ordinance.

1.40. **Preliminary Plat** means a recordable map or other graphical representation of land prepared in accordance with Utah Code Ann. § 10-9a-103(50) (2021), and as required by the City's Vested Laws.

1.41. **Project Infrastructure** means those items of public or private infrastructure within the Property which are necessary for development of the Planned Community including all roads (including traffic signage, striping, and traffic control improvements), utilities, lighting, curbs, gutters, sidewalks, parks, trails, rough and final grading, trees, sod, seeding, and other landscaping, storm water detention and retention facilities, water mains, storm sewers, sanitary sewers, and all other improvements required pursuant to this MDA, Final Plats, City's Vested Laws, and/or City's Future Laws, as applicable.

1.42. **Project** means the development to be constructed on the Property pursuant to this MDA with all of the associated public and private facilities, Intended Uses, Densities, Phases, and all of the other aspects approved as part of this MDA including all of the Exhibits.

1.43. **Property** means that approximately two hundred sixty eight (268) acres described in Exhibit "A"

1.44. **Public Infrastructure** means infrastructure, improvements, or facilities that benefit the public and are owned by a public entity or a utility and are subject to public financing under the Public Infrastructure District Act of Utah Code Ann. § 17D-4-101 *et seq.*

1.45. **Residential Dwelling Unit ("RDU")** means a single unit intended to be occupied for residential living purposes; and, for purposes of calculating the Maximum Residential Units, each Detached Single Family Dwelling Unit and each individual unit within a multi-family dwelling, condominium, or

time-share shall individually equal one RDU. Accessory dwelling units, casitas, and other similar uses that are ancillary to a primary residential use shall not be counted as a Residential Dwelling Unit for purposes of the Maximum Residential Units.

1.46. **Subdeveloper** means an entity or person not “related” (as defined by Internal Revenue Service regulations) to Master Developer which purchases a Parcel for development and pursuant to an assignment approved by the City pursuant to Subsection 8 hereof, is assigned the rights and assumes the responsibilities of this MDA applicable to such Parcel as more specifically set forth in the approved assignment and assumption agreement.

1.47. **Subdivision** means the division of any portion of the Property into a subdivision pursuant to state law and/or the Zoning Ordinance.

1.48. **Traffic Impact Study (“TIS”)** means the study to estimate site-generated traffic volumes and assess their impact on the transportation system within and outside of the Planned Community fully specified in Exhibit “D”.

1.49. **Zoning Ordinance** means the City’s “land use ordinances” as set forth in Title 10 (2021) of the Herriman City Code and which have been adopted pursuant to the Act that were in effect as of the Effective Date as a part of the City’s Vested Laws.

SECTION 2

DEVELOPMENT OF THE PLANNED COMMUNITY

2.1. **Compliance with Local Laws and Standards.** The City has reviewed the City’s Vested Laws and the General Plan and has determined that the Planned Community substantially complies with the provisions thereof and hereby finds that the Planned Community is consistent with the purpose and intent of the relevant provisions of the General Plan and the City’s Vested Laws.

2.2. **Approved Maximum Residential Units.** The Maximum Residential Units in the Planned Community shall be three hundred fifty four (354) Residential Dwelling Units. The RDUs shall be generally located in the areas illustrated in the Land Use Master Plan as more fully detailed in the Design Guidelines and future approvals as required by City’s Vested Laws or this MDA. Subject to the requirements of Section 2.2.2, the Design Guidelines and Master Plan provide for certain flexibility in locating various types of RDUs within the areas of the Planned Community and making specified modifications of the numbers of each type of RDU within the designated areas.

2.2.1. **No Guarantee.** Master Developer and Owner acknowledge that the development of the Maximum Residential Units and every other aspect of the Master Plan requires that each Development Application comply with the City’s Vested Laws. The City’s entry into this MDA does not guarantee that the Master Developer or Owner will be able to construct the Maximum Residential Units or any other aspect of the Planned Community until and unless all the applicable requirements of this MDA and the City’s Vested Laws are complied with. Master Developer’s right to develop the Maximum Residential Units shall not supersede or otherwise supplant any of the other requirements or obligations of Master Developer under this MDA (i.e. the dedication and improvement of Open Space or construction of commercial development within the Planned Community).

2.2.2. **Accounting for Use of Maximum Residential Units.** With each Development Application approval of a Preliminary Plat, sale of a Parcel as identified in Section

2.8, or approval of a mixed use Site Plan (that has some form of Residential Dwelling Units), Master Developer, or a Subdeveloper as the case may be, shall provide the City a Development Report showing the number and type of Maximum Residential Units, acres, amount of open space, and other items governed by this MDA that are used within the Phase, Subdivision, or proposed Development Application and the number and type of Maximum Residential Units remaining with Master Developer for the remainder of the Planned Community.

2.3. **Land Uses within Planned Community; Configuration.** The approved general configuration of Intended Uses within the Planned Community are those identified in the Land Use Master Plan and Design Guidelines. The Master Plan reflects the general location and configuration of residential and commercial development and open space within the Planned Community. The City specifically delegates those determinations to the appropriate body for approval as specified in the MDA or City's Vested Laws, subject to the policy guidance in this MDA.

2.4. **Compliance with TIS; Letter Required with Development Applications.** The Parties hereby acknowledge that the current TIS is based upon projected land uses and numbers of units within the Planned Community. The Parties also acknowledge that the final number of units, the type of RDU's, and layout of approved land uses within the Planned Community may be different than those projections used in the current TIS. Accordingly, Master Developer and/or a Subdeveloper shall submit with each Development Application a letter from a licensed traffic engineer certifying that the development proposed by the Development Application substantially complies with the assumptions and projections of the TIS for the Phases(s) in which the proposed development will occur. The traffic engineer's letter under this Section 2.4 shall also certify that the proposed road infrastructure will supply a level of service equal to or greater than "D" for off- and on-site roads when taking into account the effects of the development proposed by the Development Application. The City may request to review the assumptions and methodologies used in the traffic engineer's letter prior to submission of a Development Application.

2.4.1. **Additional Traffic Impacts; Updated Traffic Impact Study.** If the traffic engineer's letter under Section 2.4 indicates that the number of units, types of RDU's, uses, or other relevant factors identified in the proposed Development Application do not substantially comply with the TIS or otherwise cause substantially and materially greater impacts on proposed or existing road infrastructure beyond those impacts considered in the TIS, then Master Developer and/or Subdeveloper shall be required to conduct an updated traffic impact study, at Master Developer's or Subdeveloper's own cost, prior to any development approval from the City, as the case may be, for the Development Application at issue.

2.4.1.1. **Scope of Updated Traffic Impact Study.** The updated traffic impact study, if required under Section 2.4.1, shall be completed by a licensed traffic engineering firm and shall identify the location, number, and mixture of housing types proposed by a Development Application and shall take into account the regional impacts of such locations, number, and mixture of housing types. The updated traffic impact study shall also provide an update of the Recommended Improvements together with a calculation of the Master Developer's proportionate share of the cost and timing of such Recommended Improvements. Notwithstanding anything herein to the contrary, the updated traffic impact study shall only be required to consider impacts to roads already in the existing TIS and only those impacts caused by changes to the Land Use Master Plan.

2.4.2. **Proportionate Share of Additional Impacts Paid for by Master Developer.** Pursuant to Section 5 hereof, Master Developer shall pay its proportionate share of the cost of the Recommended Improvements as identified in the updated traffic impact study. Master Developer's obligation under this Section 2.4.2 shall not extend to any new off-site capital roads constructed by the City or others after the Effective Date. Master Developer may elect to construct the off-site improvement identified in the updated traffic impact study so long as the City provides a reasonable method of reimbursement to the Master Developer for the non-proportionate share of the off-site improvements.

2.4.3. **Dispute Resolution of Disputes Relating to Traffic Impact Mitigation.** Material differences or disputes between the Master Developer's proportionate share, impacts, costs, an updated TIS, or any other matter relating to traffic caused by or within the Planned Community shall be resolved in accordance with the dispute resolution provisions of Section 9.19.

2.5. **Telecommunications Services.** Subject to all applicable Federal and State laws, Master Developer and/or a Subdeveloper may install or cause to be installed underground all conduits and communications lines within the Planned Community and underneath any public streets within the Planned Community, at no expense to the City. Any and all conduits, cable, lines, connections and lateral connections (except for conduit installed for public utilities, such as power, natural gas, culinary water, telecommunications services that are regulated as such by the Federal Communications Commission, and sanitary sewer, that are installed as part of the System Improvements located on the Property, which will be owned by the City) shall remain the sole and exclusive property of Master Developer or its designee even though the roadways in which such conduits, cable, lines, connections and lateral connections are installed may be dedicated to the City. This Section 2.5, and the following 2.5.1 and 2.5.2, are in no way intended to limit the installation of any telecommunications infrastructure or services by a third party within the publicly owned rights-of-way located in the Planned Community.

2.5.1. **Easement; Developer Right to Contract.** Master Developer hereby reserves a non-exclusive commercial easement in gross on, through, across, and under such publicly dedicated rights-of-way for such conduits and cables related to the communications services contemplated in this Section 2.5. Master Developer or any Subdeveloper may contract with any communications provider of its own choice and grant an exclusive easement to such telecommunications provider to furnish its services for the private property within the Planned Community.

2.5.2. **Franchise Agreement Required.** The City is entitled to charge and collect all taxes and/or fees with respect to cable, information and telecommunication services as allowed under State Law.

2.6. **Master Developers' Discretion.** Notwithstanding anything to the contrary herein, nothing in this MDA shall obligate the Master Developer to construct the Planned Community or any particular Project or Phase therein, and the Master Developer shall have the discretion to determine whether to construct a particular Project or Phase based on such Master Developer's business judgment. Once construction has begun on a specific Plat or Subdivision, the relevant Master Developer or Subdeveloper(s) shall have the obligation to complete the public and private road, storm drain, water, and other improvements associated with such plat or plan, including all associated community benefits (including parks and open space as required by this MDA) as described and scheduled within the applicable Phase, and those other improvements that may be outside of the approved Plat or Subdivision but which are

reasonably necessary to complete the improvements within the Plat or Subdivision. Such improvements shall be completed within the time agreed upon by the City and Master Developer. If no time for completion of the improvements can be mutually agreed upon, the matter shall be subject to the dispute resolution procedures defined in Section 9.19.

2.7. **Concurrency Management Required.** Development Applications shall be required to include reasonable verification of the continued availability and adequacy of sanitary sewer service, storm water service, culinary water service, fire protection (including water fire flow, storage, and other similar requirements), and utilities for the development activity contemplated by each such Development Application. The City is under no obligation to issue any building permits until Master Developer and/or Subdeveloper provide the City with reasonable verification, based upon sound engineering standards, that adequate utility rights/contracts and infrastructure are available for each Phase or Subdivision and that such utility rights/contracts and infrastructure can be funded and installed as per the requirements of this MDA. Utility and infrastructure systems shall be phased based on the timing of the various Phases or Subdivisions, as the case may be, and as generally set forth in the Land Use Master Plan. All utility and infrastructure systems shall accommodate anticipated build-out and include a plan to reduce long-term costs, optimize efficiencies, and reserve land and corridors needed for future growth provided that there are appropriate provisions for reimbursement to Master Developer for “System Improvements”, as that term is defined in Utah Code Ann. § 11-36a-102(22), (2021).

2.7.1. **Bonding.** Bonding for public improvements, and any releases of those bonds, shall be governed by Utah State law, with installation of public improvements and release of bonds to take place in accordance with the City’s Vested Laws.

2.8. **Acknowledgement of Parcels.** The City acknowledges that the precise location and details of the public improvements, lot layout and design, and any other similar items regarding the development of a particular Parcel, may not be known at the time of the creation of or sale of a Parcel. The City acknowledges that Master Developer may create or sale a Parcel or Subdivision, as is provided in Utah Code Ann. § 10-9a-103(65)(c)(v) (2021), that does not create any individually developable lots in the Parcel or Subdivision without being subject to any requirement in the City’s Vested Laws to complete or provide security for any Public Infrastructure at the time of such Parcel or Subdivision. Whenever a Parcel or Subdivision is sold by Master Developer, Master Developer shall provide the City with a Development Report. The responsibility for completing and providing security for completion of any Public Infrastructure in the Parcel shall be that of the Master Developer or a Subdeveloper upon a subsequent re-Subdivision of the Parcel and approval by the City, pursuant to this MDA, that creates individually developable lots. However, construction of such improvements shall not be allowed until the Master Developer or Subdeveloper complies with this MDA and the City’s Vested Laws.

2.9. **Order of Development.** To effectuate the most efficient provision of municipal-type services, new residential phases shall, to the extent practical, be reasonably proximate to residential phases that have been constructed or are being constructed within the Planned Community. Notwithstanding the foregoing, Master Developer or an applicable Subdeveloper may, pursuant to an approved Phase or Subdivision, develop two or more Projects concurrently that are located in different areas of the Planned Community.

2.10. **Commercial Development within the Planned Community.** The Parties acknowledge that there may be a need to include certain commercial uses within the Planned Community. The Parties also acknowledge that commercial uses are generally best located near higher volume corridors or near public amenities. The final locations of higher volume corridors or public amenities within or near the Planned Development are not yet determined. As such, the Parties have identified potential commercial nodes, as depicted in the attached Exhibit “B”.

2.10.1. **Possible Commercial Increase.** The Parties acknowledge that additional Commercial Development with the Planned Community would be beneficial to the City, the residents of the Planned Community, Master Developer and Owner. However, the TIS was calculated based on no Commercial Development. If Commercial Development is proposed by Master Developer an updated TIS shall be required. If the updated TIS determines that there is no material adverse impact generated by the proposed Commercial Development than the Commercial Development shall be allowed without amendment to this MDA so long as the Commercial Development complies with the Design Guidelines. If the updated TIS determines that there is a material adverse impact generated by the proposed Commercial Development than the Commercial Development shall only be allowed without amendment to this MDA so long as Master Developer implements any mitigation required by the updated TIS to ensure that the proposed Commercial Development does not have a material adverse traffic impact.

2.11. **Effect of this MDA.** Except as otherwise provided in this MDA, as the same may be amended or supplemented from time to time, this MDA shall be the sole agreement between the Parties for the development of the entirety of the Property. Notwithstanding the foregoing, various other development, infrastructure, and other agreements may be entered into by and among the Parties hereto and others with respect to the development of various Projects, Phases, or specific infrastructure developments over the course of the Planned Community's development. Master Developer and Owner acknowledge and agree that notices have been properly given and required meetings and hearings have been held by the City with respect to the approval of this MDA. Additionally, Master Developer and Owner agree not to challenge City's approval on the grounds of any procedural infirmity or any denial of or failure respecting any procedural right.

2.12. **Certain Extraction, Processing and Uses Permitted.** Master Developer, and/or its agents, successors, assigns, tenants, guests, and invitees shall be permitted to extract and process the Extractable Natural Materials located on the Property. The Extractable Natural Materials may be used and processed on-site in the construction of infrastructure, homes, or other buildings or improvements located on the Property. Additionally, the Extractable Natural Materials may be used for purposes of constructing public or private off-site improvements that are associated with development of the Planned Community or other projects associated with the Master Developer. The zoning for the Property shall not be construed to limit or restrict any such temporary development-related extraction, processing and hauling activities.

2.12.1. **Land Disturbance Permit Required.** Master Developer shall obtain a land disturbance permit from the City prior to extracting or processing the Extractable Natural Materials on the Property. The land disturbance permit shall require a plan to mitigate fugitive dust control as required by the State of Utah and shall establish the maximum grade/depth from which the Extractable Natural Materials may be extracted. Master Developer agrees not to extract or process materials beyond the final grade for the site from which such Extractable Natural Materials are extracted. In the event that Master Developer does extract or process beyond the final development grade, Master Developer shall be required to backfill the site and return it to final development grades. The City shall issue a land disturbance permit if the standards of this Section 2.14 are satisfied.

2.12.2. **Transport of Natural Material.** The Parties acknowledge that the transport of the Natural Materials for on-site and off-site uses as anticipated above will cause certain damage to existing roadway improvements within and around the Planned

Community. To the extent commercially practicable, Master Developer agrees to utilize unimproved roadways to transport the Natural Material for on-site and off-site uses as authorized herein.

2.13. **Preservation of the Public Land Survey System.** The Salt Lake County Surveyor has identified the presence of approximately nine government survey monuments or public land survey government corners within the boundary of the Planned Community. Master Developer shall, in consultation with and at the direction of the Salt Lake County Surveyor, comply with the requirements of Utah Code Ann. §§ 17-23-14 and 17-23-15 throughout the process of constructing the Planned Community.

SECTION 3

VESTED RIGHTS AND RESERVED LEGISLATIVE POWERS

3.1. **Vested Rights.** To the extent permissible under the laws of the State of Utah and the United States and at equity, and subject to Subsection 3.4, the City and Master Developer intend that this MDA grants to Master Developer all rights to develop the Planned Community in accordance with the terms and conditions of this MDA. This MDA may modify, in certain respects, the operation of the Code and the City's Vested Laws pertaining to the Property. To such an extent that the terms and conditions of the MDA conflict with the Code or the City's Vested Laws, this MDA shall be considered a land use application and an ordinance adopted by the City through its legislative power and consistent with Utah Code Ann. § 10-9a-502 (2021), including a review and recommendation from the planning commission and a public hearing, and shall thereafter operate as an amendment to any portion of the Code that is inconsistent with the terms and conditions of this MDA. The Parties specifically intend that this MDA grants to Master Developer "vested rights" as that term is construed in Utah Code Ann. § 10-9a-509 (2021).

3.2. **Invalidity.** Master Developer and Owner covenant and agree not to bring suit to have any of the City's Vested Laws declared to be unlawful, unconstitutional, or otherwise unenforceable. If any of the City's Vested Laws are declared to be unlawful, unconstitutional, or otherwise unenforceable, Master Developer and Owner, along with any Subdeveloper hereunder, will nonetheless comply with the terms of this MDA. Master Developer and Owner shall also, in that event, cooperate with the City in adopting and agreeing to comply with a new enactment by the City which is materially similar to any such stricken provision and which implements the intent of the Parties in that regard as manifested by this MDA.

3.3. **Reserved Legislative Powers.** The Parties acknowledge that under the laws of the State of Utah (including Utah Code Ann. § 10-9a-532 (2021)) and the United States, the City's authority to limit its police power by contract is restricted and, as such, the limitations, reservations, and exceptions set forth herein are intended to reserve to the City those police powers that cannot be so limited. Notwithstanding the retained power of the City to enact such legislation under the police powers, such legislation shall only be applied to modify the vested rights of the Master Developer under the terms of this MDA based upon the policies, facts, and circumstances meeting the compelling, countervailing public interest exception to the vested rights doctrine in the State of Utah. Any such proposed legislative changes affecting the vested rights of the Master Developer under this MDA shall be of general application to all development activity in the City and, unless the City declares an emergency, Master Developer shall be entitled to prior written notice and an opportunity to be heard with respect to any proposed change and its applicability to the Planned Community under the compelling, countervailing public interest exception to the vested rights doctrine.

3.4. **Excepted Laws and Ordinances.** The City expressly reserves its authority to impose the City's Future Laws to the Planned Community and the Property in any one or more of the following circumstances and Master Developer agrees to abide by such laws:

- 3.4.1. **Compliance with State and Federal Laws.** City's Future Laws which are generally applicable to all similarly situated properties in the City and which are required to comply with State and Federal laws and/or regulations affecting the Planned Community and/or the Property.
- 3.4.2. **Safety and Health Code Updates.** City's Future Laws that are updates or amendments to existing health regulations, building, plumbing, mechanical, electrical, street lighting, dangerous buildings, drainage, or similar construction or safety related codes, such as the International Building Code, International Fire Code, Salt Lake County Health Department Regulations, the APWA Specifications, American Association of State Highway and Transportation Officials (AAHSTO) Standards, the Manual on Uniform Traffic Control Devices (MUTCD) and similar standards that are generated by a nationally or statewide recognized construction/safety organization, or by the City, State or Federal governments and are required to meet legitimate concerns related to public health, safety or welfare.
- 3.4.3. **Ordinances and Resolutions Not Inconsistent.** Ordinances and resolutions of the City not in conflict with the provisions of this MDA and rights granted to the Master Developer and the Owner hereunder.
- 3.4.4. **Taxes.** Taxes, and modifications thereto, so long as such taxes are lawfully imposed and charged uniformly by the City or any other local entity with taxing authority under Utah law, to all properties, applications, persons and entities that are similarly situated.
- 3.4.5. **Fees.** Changes to the amounts of fees assessed by the City or any other entity authorized to assess development related fees (including one or more public infrastructure districts that may be established in connection with the development of the Planned Community) for the processing of Development Applications (including inspections) that are in accordance with the terms of this MDA or otherwise applicable to all development within the City (or a portion of the City as specified in the lawfully adopted fee schedule).
- 3.4.6. **Impact Fees.** Impact Fees or modifications thereto which are lawfully adopted, imposed, and collected by the City or any other entity which is lawfully authorized to adopt, impose, and collect Impact Fees within the Planned Community. Master Developer, Owner, and any Subdeveloper agree that the impact fees imposed by the City meet all requirements of the U.S. Constitution, Utah Constitution, and all applicable statutes and other law including, but not limited to, Utah Code Ann. § 11-36a-101 *et seq.*, (2021).
- 3.4.6.1. Impact Fees Assessed. The Planned Community shall only be assessed the Police and Fire Public Safety Impact Fees as enacted by the City and pursuant to the Impact Fees Act of Utah Code Ann. § 11-36a-101 *et seq.* (2021).
- 3.4.6.2. No Challenge to Impact Fees. Owner, Master Developer, and any Subdeveloper hereby agree not to challenge the City's current impact fees and shall specifically notify any Subdeveloper of this provision.

- 3.4.6.3. **School District Not Subject to Impact Fees.** The Parties and the Special Owner agree that notwithstanding anything to the contrary herein, the Special Owner shall not be assessed any Impact Fees for the development of the School District Property for a school.
- 3.4.7. **Municipal Services Fees.** Fees imposed to pay for municipal-type services and/or infrastructure provided by the City and/or any other provider, including but not limited to, stormwater utility, special assessments, parks, and connection or hookup fees.
- 3.4.8. **Generally Applicable laws not in conflict with this MDA.** City regulations, ordinances, resolutions, or policies adopted after the date of this MDA that are not in conflict with the terms and conditions for development of the Property established by this MDA, which are generally applicable throughout the City and which do not materially increase the cost of developing the Planned Community nor diminish the number or types of the Intended Uses.
- 3.4.9. **Design Guidelines.** Design Guidelines, as defined in this Agreement, that are agreed to after the Effective Date.

SECTION 4 DEVELOPMENT APPLICATION REVIEW PROCESS

4.1. **Required Process.** The approvals set forth in Exhibit “F” establish the required review and approval bodies for Development Applications in the Planned Community. No Development Application shall be approved without first submitting such Development Application for review as set forth herein. This process is designed to limit the number of submittals and reviews required for Development of the Planned Community, to ensure that each Development Application is compliant with this MDA, and to make the implementation of this MDA an administrative function excepting only those items that, by applicable law or pursuant to this MDA, require Planning Commission and/or City Council review or approval.

4.2. **Processing Under City’s Vested Laws.** Approval processes for Development Applications shall be as provided in the City’s Vested Laws, except as otherwise provided in this MDA. Development Applications shall be approved by the City if such Development Applications comply with the City’s Vested Laws and this MDA.

4.3. **No Construction Without Development Application Approval.** No improvements shall be constructed within any Parcel without Master Developer or a Subdeveloper first obtaining approval of the Development Application for such Parcel from the City. Upon approval by the City of any Development Application, the Parcel related to such approval may be improved in accordance with the approved Development Application, subject to the terms, conditions, and provisions of the Development Application.

4.4. **Standard Review Fees.** Master Developer or a Subdeveloper shall pay to the City the standard fees applicable to any submittal of a Development Application under the City’s fee schedule in effect at the time of the application.

4.5. **Processing of Development Applications.** The City shall cooperate reasonably and in good faith in promptly processing and reviewing all Development Applications in accordance with the procedures identified in this Agreement, including Exhibit “F”. If Master Developer or a Subdeveloper determines that the City has not met all of the processes and timeliness set forth in the review processes

identified herein, then Master Developer or a Subdeveloper shall have the right to request a decision pursuant to Utah Code Ann. § 10-9a-509.5.

4.6. **Standard of Development Application Review.** If any conflict arises during the applications review process described herein between the Design Guidelines, the City's Vested Laws, and the City's Future Laws, the Design Guidelines shall control.

4.7. **Non-City Agency Reviews.** If any aspect or a portion of a Development Application is governed exclusively by a Non-City Agency, an approval for these aspects does not need to be submitted by an Applicant for review by any body or agency of the City. The Applicant shall timely notify the City of any such submittals and promptly provide the City with a copy of the requested submissions. The City may only grant final approval for any Development Application subject to compliance by Applicant with any conditions required such Non-City Agency's approval.

4.8. **Acceptance of Certifications Required for Development Applications.** Any Development Application requiring the signature, endorsement, or certification or stamping by a person holding a license or professional certification required by the State of Utah in a particular discipline shall be so signed, endorsed, certified, or stamped signifying that the contents of the Development Application comply with the applicable regulatory standards of the City. A Development Application so signed, endorsed, certified, or stamped shall be deemed to meet the specific standards which are the subject of the opinion or certification without further objection or required review by the City or any other agency of the City. It is not the intent of this Section to preclude the normal process of the City's redlining, commenting on, or suggesting alternative to the proposed designs or specifications in the Development Application.

4.9. **City Denial of a Development Application.** If the Administrator, Planning Commission, or City Council denies a Development Application, the denying body shall provide a written determination advising the Applicant of the reason(s) for Denial including specifying the reasons the denying body believes that the Development Application is not consistent with this MDA, the City's Vested Laws, or the City's Future Laws that should apply to the Development Application.

SECTION 5

FINANCING OF PUBLIC INFRASTRUCTURE IN THE PLANNED COMMUNITY

5.1. **Construction of On-Site Public Infrastructure by Master Developer.** Master Developer shall have the right and the obligation to construct or cause to be constructed and installed within the Planned Community all Public Infrastructure reasonably and lawfully required as a condition of approval of a Development Application as the Development Application work is done. However, Master Developer shall not be obligated to construct roads or dedicate right-of-way larger than what is required by the Road Master Plan (Exhibit "B-4") or this MDA unless additional funds are secured and used by the City for the purposes identified in Section 2.12, including any required upsizing due to increased traffic impacts from roads not identified in the TIS or outside of the City. The Public Infrastructure shall be designed and constructed in compliance with all applicable standards in this MDA; the City's Vested Laws; and any other Federal, State, or County laws, rules or regulations. The Public Infrastructure shall be consistent with and fulfill the purposes of adopted plans for such infrastructure that are a part of the City's Vested Laws.

5.1.1. **Bonding for Public Infrastructure.** If and to the extent required by the City's Vested Laws, unless otherwise provided by Utah State Law, security for any Public Infrastructure that is required by the City, Applicant shall provide it in a form acceptable to the City as specified in the City's Vested Laws. Partial release of any such required security shall be made consistent with the City's Vested Laws.

- 5.1.2. **Street Tree Warranty Period.** Master Developer shall warrant all trees planted along ZZZ that are located within the Planned Community for a period of two years from the time such trees are installed so long as the City has adequately watered and otherwise cared for the street trees. The warranty contemplated by this Section 5.1.2 shall be against any defects or other natural conditions that result in the death of such trees. Master Developer may choose to replace such trees at their own cost or, alternatively, pay the City for the cost of the replacement upon City's request.

5.2. **Public Infrastructure Financing.** The City has adopted Public Infrastructure Districts to pay for the Public Infrastructure. Master Developer's obligation to construct the Public Infrastructure within the Planned Community shall not be negated or become invalid as a result of insufficient financing through such Public Infrastructure Districts. The Public Infrastructure Districts may also, at the Master Developer's sole discretion, be used to pay the City for Master Developer's proportionate share of Off-Site impacts to Public Infrastructure.

- 5.2.1. **One-Time Contract Fee.** The Parties hereby acknowledge that the collateral for securing public financing through the Public Infrastructure Districts shall be the One-Time Contract Fee. The Parties acknowledge that the One-Time Contract fee contemplated hereunder is not being assessed as an "impact fee" as that term is defined in Utah Code Ann § 11-36a-102(9) (2021).

5.3. **Upsizing of Public Infrastructure.** The City shall not require Master Developer to construct any Public Infrastructure larger than is required to service the Planned Community ("upsizing") unless financial arrangements reasonable acceptable to Master Developer are made to compensate Master Developer for the incremental or additive costs of such upsizing. For example, if an upsizing to a water pipe size increases costs by 10% but adds 50% more capacity, the City shall only be responsible to compensate Master Developer for the 10% cost increase. An acceptable financial arrangement for upsizing of improvements means reimbursement agreements, payback agreements, and impact fee credits and reimbursement.

SECTION 6 OPEN SPACE

6.1. **Minimum Open Space Requirements and Layout.** Subject to the provisions of this Section 6, Master Developer shall set aside at least 20% of the Planned Community as Open Space. Such Open Space shall include parks, trails, detention/retention, and other qualifying uses as set forth in the Design Standards and as generally indicated in the Parks Master Plan attached hereto as Exhibit "B-1". The City agrees that the Open Space set aside by Master Developer for those qualifying uses as identified in the Design Standard shall be counted at one hundred percent (100%) of the actual acreage of such Open Space to satisfy the Open Space requirements of this MDA.

6.2. **Pro Rata Accounting of Open Space.** The Parties intend that the creation of Open Space will maintain a pro rata relationship between the amount and use of land being developed under a Development Application and the total acreage designated for Open Space as identified herein. Accordingly, the Parties acknowledge that it may not be in their individual or mutual best interests to dedicated Open Space on such a basis that may result in constructing or designating incremental, small, unprogrammable, and/or unusable parcels of land. As such, each Development Application approval shall provide for the designation of Open Space in such amounts as are determined to be appropriate by the Parties taking into consideration each of the following factors: (a) any previously dedicated Open Space and its relative location and access to the proposed Development Application; (b) the amounts and types of regional-style Open Space within the Planned Community and their relative location to the proposed

Development Application; (c) the amounts and types of Open Space remaining to be designated or constructed on the portion of the Planned Community that are remaining to be developed; and (d) the amount and nature of land and the types of land uses proposed by the Development Application.

6.2.1. **Delayed Open Space Dedications.** The Parties mutually recognize the public benefit of constructing larger, more programmable Open Space within the Planned Community. As such, each Development Application need not individually set aside 20% of its acreage toward the Open Space requirements of this MDA so long as the 20% Open Space requirement for each Development Application is completed within the larger Planned Community pursuant to the requirements of this MDA. However, in no event shall the completed Open Space within the Planned Community fall behind more than 10% of the requirements of this MDA. By way of example only, if 100 acres of the Planned Community has been developed, Master Developer shall have set aside at least 10 acres of Open Space.

6.2.2. **Catch-Up.** If, with a proposed Development Application, Master Developer would fall greater than 10% behind on its obligation to set aside Open Space, the City may withhold building permits for the proposed Development Application until such time as Master Developer catches-up on the Open Space requirements hereunder.

6.3. **Denial of Open Space.** Any denial by the City of a Development Application based on the amount or location of Open Space shall be subject to the mediation provision in Section 9.19 of this MDA.

6.4. **Effect of Capital Roads on Open Space Requirements.** The Parties acknowledge that any part of the Planned Community that is improved with capital roads, as such are identified on the Roads Master Plan attached hereto as Exhibit “B-4” and on the City’s Transportation Master Plan, shall not be required to contribute any amount of Open Space under this MDA. Accordingly, the total acreage of capital roads shall be reduced from the overall total acreage of the Planned Community (____) when calculating the minimum Open Space requirements established herein. For the sake of clarity, and by way of example only, if the capital roads cover ____ acres of property within the Planned Community, the minimum Open Space requirement shall be ____ acres (____ – 15 = ____ x 20% = ____).

6.5. **Dedication of Open Space.** Master Developer and/or a Subdeveloper shall dedicate to the City any Local Parks, Neighborhood Parks, Community Parks, and other portions of Open Space that are at least two (2) contiguous acres or greater as provided in this MDA, excepting only trails which shall have no minimum acreage requirement for dedication to the City. All Open Space that is less than two contiguous acres in size, excluding only trails, shall be privately owned and maintain as provided herein. All such dedications to the City shall be made by Special Warranty Deed, subject to all matters of record; provided, however, that title will be conveyed free and clear of any financial or other encumbrances that materially and adversely interfere with the use of the property as Open Space. The dedication of any Open Space within a Subdivision shall occur immediately following the recordation of the final Subdivision plat and after final inspection and acceptance of the Open Space improvements by the City.

6.6. **Maintenance of Open Space.** The City shall be responsible for maintaining all Open Space that is dedicated to the City pursuant to Section 6.7 of this MDA. All other Open Space shall be privately owned and maintained by an entity other than the City and shall be maintained consistent with City standards as updated from time-to-time in the City’s Future Laws. In the event that Master Developer or a Subdeveloper installs or improves any Open Space that is dedicated to the City as provided in Section 6.7, Master Developer or the Subdeveloper will provide the City with a warranty from the contractor that the improvements to such City-dedicated Open Space are free from defects for a period of one (1) year after all of the improvements have been installed and accepted by the City.

SECTION 7
MODIFICATIONS AND AMENDMENTS OF THIS MDA

7.1. **Modifications and Amendments to this MDA.** The Parties acknowledge that there may be a desire to modify or amend portions of this MDA to accommodate a Development Application. Additionally, either party may request to amend, modify, or supplement this MDA unrelated to any Development Application. Any amendment, modification, or supplement to this MDA must be in writing and approved by all of the Parties hereto as provided herein. Only the City and Master Developer with the consent of the Owner, or an assignee that succeeds to all of the rights and obligations of the Owner and Master Developer under this MDA, (and not including a Subdeveloper) may submit an application to modify or amend this MDA. The following modifications and amendments to this MDA may be considered.

7.1.1. **Administrative Modifications.** The Administrator may approve, after consulting with City staff and without approval of the Council, sizing and or location modifications of the Project Infrastructure, the Design Guidelines (as permitted therein), location of Open Space within the Planned Community, the general layout and configuration of the development area between proposed roads and as identified in the Land Use Master Plan (Exhibit “B”), and any part of the Project Infrastructure for the Planned Community that do not materially change the functionality of the Project Infrastructure and so long as such modifications are based upon sound engineering.

7.1.1.1. **Application to Administrator.** Applications for Administrative Modifications shall be filed with the Administrator.

7.1.1.2. **Referral by Administrator.** If the Administrator determines for any reason that it would be inappropriate for the Administrator to determine any Administrative Modification, the Administrator may require the Administrative Modification to be processed as a Legislative Amendment.

7.1.1.3. **Administrator’s Review of Administrative Modification.** The Administrator shall consider and decide upon the Administrative Modification after consulting with applicable City subject-matter experts and within ten (10) calendar days after receipt of the request for an Administrative Modification. If the Administrator approves the Administrative Modification, the Administrator shall record notice of such approval against the applicable portion of the Property in the official County records.

7.1.1.4. **Appeal of Administrator’s Denial of Administrative Modification.** If the Administrator denies any proposed Administrative Modification, the Applicant may process the proposed Administrative Modification as a Legislative Amendment.

7.1.2. **Legislative Amendments.** Except for Administrative Modifications, any future modifications or amendments to this MDA shall be considered as Legislative Amendments. The Parties acknowledge that the entire MDA, including all of the attached exhibits, are subject to Legislative Amendment consistent with the following processes.

- 7.1.2.1. Contents. An application for a Legislative Amendment Applications shall: (i) identify the property or properties affected by the requested Legislative Amendment; (ii) describe the effect of the Legislative Amendment on the affected portions of the Planned Community; (iii) identify any Non-City agencies potentially having jurisdiction over the Legislative Amendment; (iv) provide a map of any affected property and all property within three hundred feet (300') showing the present or Intended Uses and RDUs of all such properties; and (v) be accompanied by a fee in an amount reasonably estimated by the City to cover the costs of reviewing and processing the application for the Legislative Amendment.
- 7.1.2.2. City Cooperation. The City shall cooperate reasonably in promptly and fairly reviewing applications for Legislative Amendments. However, the City shall be under no obligation to actually approve a Legislative Amendment to this MDA.
- 7.1.2.3. Planning Commission Review and Recommendation. All aspects of a proposed Legislative Amendment required by law to be reviewed by the Planning Commission shall be considered by the Planning Commission as soon as reasonably possible in light of the nature and/or complexity of the proposed Legislative Amendment. The Planning Commission's vote on the Legislative Amendment shall be only a recommendation to the Council and shall not have any binding or evidentiary effect on the consideration of the Legislative Amendment by the Council.
- 7.1.2.4. Council Review. After the Planning Commission has made or been deemed to have made its recommendation on the proposed Legislative Amendment, the Council shall consider the Legislative Amendment at its next available regularly scheduled Council meeting.
- 7.1.2.5. Standard of Review/Approval; Sufficient Consideration Required. The Council, in reviewing the proposed Legislative Amendment, shall identify the consideration of the Parties and shall specifically call out such consideration and the benefits received by the City in the final written instrument approving a proposed Legislative Amendment.
- 7.1.2.6. Council's Denial. If the Council does not approve the proposed Legislative Amendment, the Council shall provide a written determination, or a verbal finding stated on the record, advising the Applicant of the reasons for denial, including specifying the reasons the City believes that the Modification Application is not consistent with the intent of this MDA, the Zoning Plan, the Infrastructure Plan, and/or the City's Vested Laws (or, only to the extent permissible under this MDA, the City's Future Laws).

SECTION 8 SUCCESSORS AND ASSIGNS

8.1. **Assignability.** The rights and responsibilities of Master Developer under this MDA may not be assigned in whole or in part by Master Developer without the prior written consent of the Council, which consent shall not be unreasonably withheld, conditioned, or delayed. Any assignee, including all Subdevelopers, shall consent in writing to be bound by the assigned terms and conditions of this MDA as a condition precedent to the effectiveness of the assignment.

8.2. **Other Transactions.** Master Developer and/or Owner's transfer of all or any part of the Property to any entity "related" to Master Developer and/or Owner (as defined by regulations of the Internal Revenue Service), Master Developer and/or Owner's entry into a joint venture for the development of all or any part of the Property, or Master Developer and/or Owner's pledging of part or all of the Property as security for financing shall also not be deemed to be an "assignment" subject to the above-referenced approval by the Council unless specifically designated as such an assignment by the Master Developer and/or Owner. Master Developer and/or Owner shall give the City Notice of any event specified in this Subsection within ten (10) days after the event has occurred. Such Notice shall include providing the City with all necessary contact information for the newly responsible party. Master Developer and/or Owner shall remain responsible for all obligations of this Agreement in such a transfer to a related entity, joint venture, or security for financing.

8.3. **Sale of Lots.** Owner's and Master Developer's selling or conveying lots in any approved Subdivision or Parcels to builders, users, or Subdevelopers, shall not be deemed to be an "assignment" subject to the above-referenced approval by the Council unless specifically designated as such an assignment by Owner and Master Developer.

8.4. **Notice.** Owner and Master Developer shall give Notice to the City of any proposed assignment and provide such information regarding the proposed assignee that the City may reasonably request in making the evaluation permitted under this Section. Such Notice shall include providing the City with all necessary contact information for the proposed assignee.

8.5. **Time for Objection.** Unless the City objects in writing within five (5) business days after the next regularly schedule Council meeting of notice, the City shall be deemed to have approved of and consented to the assignment.

8.6. **Partial Assignment.** If any proposed assignment is for less than all of Owner's or Master Developer's rights and responsibilities then the assignee shall be responsible for the performance of each of the obligations contained in this MDA to which the assignee succeeds. Upon any such approved partial assignment, Owner and/or Master Developer shall be released from any future obligations as to those obligations which are assigned but shall remain responsible for the performance of any obligations that were not assigned.

8.7. **Denial.** The City may only withhold their respective consent if the City is not reasonably satisfied of the assignee's financial ability to perform the obligations of Owner or Master Developer, as the case may be, proposed to be assigned or there is an existing breach of a development obligation owed to the City by the assignee or related entity that has not either been cured or in the process of being cured in a manner acceptable to the City. Any refusal of the City to accept an assignment shall be subject to the dispute resolution provisions of Section 9.19.

8.8. **Binding Effect.** If Owner sells or conveys Parcels of lands to Subdevelopers or related parties, the lands so sold and conveyed shall bear the same rights, privileges, Intended Uses, configurations,

and Density as applicable to such Parcel and be subject to the same limitations and rights of the City when owned by Owner and as set forth in this MDA without any required approval, review, or consent by the City except as otherwise provided herein.

SECTION 9

GENERAL TERMS AND CONDITIONS

9.1. **No Addition to Planned Community.** No land may be removed from the Planned Community or added to the Planned Community for purposes of this MDA, except by written amendment to the MDA. Except as provided immediately above, this MDA shall not affect any land other than the Property.

9.2. **Recordation and Running with the Land.** This MDA shall be recorded in the chain of title for the Property. This MDA and the benefits, burdens, rights and obligations herein shall be deemed to run with the land and shall be binding on and shall inure to the benefit of all successors in ownership of the Property, or portion thereof, as applicable, with respect to that portion of the Property owned by such successors in ownership, except as expressly set forth in this MDA. Accordingly, each and every purchaser, assignee, or transferee of an interest in the Property or any portion thereof shall be obligated and bound by the terms and conditions of this MDA, but only with respect to the Property or such portion thereof sold, assigned or transferred to it.

9.3. **Construction of MDA.** This MDA was jointly drafted and shall be construed so as to effectuate the public purposes of implementing long-range planning objectives, obtaining public benefits, and protecting any compelling, countervailing public interest, while providing reasonable assurances of continued vested private development rights under this MDA.

9.4. **Laws of General Applicability.** Where this MDA refers to laws of general applicability to the Planned Community and other properties, that language shall be deemed to refer to laws which apply to all other developed and subdivided properties within the City.

9.5. **Term/Renewal/Expiration.** The term of this Development Agreement shall commence upon the Effective Date and continue until December 31, 2047. If, as of that date, Owner or Master Developer have not been declared to be in default as provided herein, then this MDA shall be automatically extended for up to two (2) five-year periods, unless Owner or Master Developer are declared to be in default as provided herein at the end of the first five-year renewal, in which case, this MDA shall be terminated at the end of the first five-year renewal. If Owner or Master Developer have not been declared to be in default at the end of the first five-year renewal, then this MDA shall continue for one final five-year renewal, or until December 31, 2057, upon which date this MDA will be considered to have been terminated. Upon termination of this MDA, any undeveloped property shall become subject to the then existing City Future Laws, and all development rights vested under this MDA shall expire except that such expiration shall not apply to any Phases or Subdivisions that have been approved prior to the termination. Any such uncompleted Phases or Subdivisions shall be allowed to be completed by December 31, 2060. This MDA shall also terminate automatically at Buildout.

9.5.1. **Failure of Option Agreement.** Notwithstanding anything to the contrary in this MDA or otherwise, should the option agreement between Master Developer and Owner be terminated with respect to all or part of the Property, this MDA shall cease to be operative or effective unless the Owner expressly assumes all of the obligations of the Master Developer arising under this MDA in a writing approved by both the City. If Owner expressly assumes all of the obligations of the Master Developer for all or part of the Property, as described above, Owner may designate a Replacement

Master Developer reasonably acceptable to the City. If the Replacement Master Developer is approved by the City, the Replacement Master Developer shall expressly assume the role and obligations of Master Developer arising under this MDA in a writing approved by both the City.

9.6. **State and Federal Law.** The Parties agree, intend, and understand that the obligations imposed by this MDA are only such as are consistent with applicable State and Federal law. The Parties further agree that if any provision of this MDA becomes, in its performance, inconsistent with applicable state or federal law or is declared invalid, this MDA shall be deemed amended to the extent necessary to make it consistent with the State or Federal law, as the case may be, and the balance of this MDA shall remain in full force and effect.

9.7. **No Waiver.** Failure of a Party to exercise any right hereunder shall not be deemed a waiver of any such right and shall not affect the right of such Party to exercise at some future time said right or any other right it may have hereunder. Unless this MDA is amended or revised in writing as allowed by this MDA, no officer, official, or agent of the City has the power to amend, modify or alter this MDA or waive any of its conditions as to bind the City by making any promise or representation not contained herein.

9.8. **Entire Agreement.** This MDA constitutes the entire agreement between the Parties with respect to the issues addressed herein and supersedes all prior agreements, whether oral or written, covering the same subject matter. This MDA may not be modified or amended except in writing mutually agreed to and accepted by all Parties to this MDA consistent with the provisions hereof.

9.9. **Notices.** All notices required or permitted under this MDA shall, in addition to any other means of transmission, be given in writing by email, certified mail, or regular mail to the following address:

Master Developer: _____

With a Copy to: Bruce R. Baird
Bruce R. Baird, PLLC
2150 South 1300 East, Suite 500
Salt Lake City, Utah 84106
bbaird@difficultdirt.com

Owner: _____

With a Copy to: _____

City: Herriman City Manager
5355 W. Herriman Main Street
Herriman, Utah 84096
ncherpeski@herriman.org

With a Copy to: Herriman City Attorney
5355 W. Herriman Main Street
Herriman, Utah 84096
candrizzi@herriman.org

9.10. **Effectiveness of Notice.** Except as otherwise provided in this MDA, each Notice shall be effective and shall be deemed delivered on the earlier of:

9.10.1. **Electronic Delivery.** Its actual receipt if delivered electronically by email provided that a copy of the email is printed out in physical form and mailed as set forth herein on the same day and the sending party has an electronic receipt of the delivery of the Notice.

9.10.2. **Mail Delivery.** Three calendar days after the Notice is postmarked for mailing, postage prepaid, by First Class or Certified United States Mail and actually deposited in or delivered to the United States Mail. Any party may change its address for Notice under this MDA by giving written Notice to the other party in accordance with the provisions of this Section.

9.11. **Applicable Law.** This MDA is entered into in Salt Lake County in the State of Utah and shall be construed in accordance with the laws of the State of Utah irrespective of Utah's choice of law rules. Legal actions shall be instituted in the Third Judicial District Court of the County of Salt Lake, State of Utah.

9.12. **Execution of Agreement.** This MDA may be executed in multiple parts or originals or by facsimile copies of executed originals; provided, however, if executed and evidence of execution is made by facsimile copy, then an original shall be provided to the other Parties within seven (7) days of receipt of said facsimile copy.

9.13. **Indemnification.** Master Developer and Owner agree to, and do hereby, agree to defend, hold harmless and indemnify the City and all City elected or appointed officials, officers, employees, agents, representatives, engineers, and attorneys from any and all claims that may be asserted at any time against any of them arising out of the negligence or willful misconduct of the Master Developer or Owner, each as applicable with respect to its own negligence or willful misconduct, in connection with the development, construction, maintenance, or use of any portion of the Planned Community, Project Infrastructure, or other improvements that Master Developer constructs. Master Developer and Owner, each as applicable with respect to its own negligence or willful misconduct, do hereby agree to pay all expenses, including without limitation legal fees and administrative expenses, incurred by City in defending itself with regard to any and all such claims. With respect to any other third-party claims challenging this Agreement or any provision herein, the Parties agree to cooperate with each other in good faith to defend said lawsuit, with each Party to bear its own legal expenses and costs.

9.14. **Nature, Survival, and Transfer of Obligations.** All obligations assumed by the Owner and/or Master Developer under this MDA shall be binding on the Owner and Master Developer personally, on any and all of the Owner and Master Developer's heirs, successors, and assigns, and on any and all of the respective successor legal or beneficial owners of all or any portion of the Property.

9.15. **Four-year Reviews.** Notwithstanding anything to the contrary herein, every four years after the execution of this MDA, the Parties shall meet and confer to consider any issues that may have arisen regarding the MDA, the development of the Property, the general economy, and other issues related to the development of the Planned Community. The first meeting shall take place at a time and place mutually agreeable to the Parties between January 15 and February 15 of 2026 and then every four years thereafter. The Parties shall not be required to make any modifications of this MDA as a result of these reviews but may propose amendments for the consideration of the Parties.

9.16. **Appointment of Representatives.** To further the commitment of the Parties to cooperate in the implementation of this MDA, the City, Owner and Master Developer each shall designate and appoint a representative to act as a liaison between the City and its various departments, and the Master Developer. The initial representative for the City shall be the City's Community Development Director. The initial

representative for Master Developer shall be Ryan Button. The initial representative for Owner shall be Jacob Anderson. The Parties may change their designated representatives by Notice as provided herein. The representatives shall be available at all reasonable times to discuss and review the performance of the Parties to this MDA and the development of the Property.

9.17. **Default.**

9.17.1. **Notice.** If any of the Parties fails to perform its respective obligations hereunder or to comply with the terms hereof, a Party believing that a Default has occurred shall provide Notice to the other Parties. If the City believes that the Default has been committed by a Subdeveloper, then the City shall also provide a courtesy copy of the Notice to Master Developer and Owner.

9.17.2. **Contents of the Notice of Default.** The Notice of Default shall:

9.17.2.1. **Specific Claim.** Specify the claimed event of Default;

9.17.2.2. **Applicable Provisions.** Identify with particularity the provisions of any applicable law, rule, regulation or provision of this MDA that is claimed to be in Default;

9.17.2.3. **Materiality.** Identify why the Default is claimed to be material; and

9.17.2.4. **Optional Cure.** If the City chooses, in their respective discretion, they may propose a method and time for curing the Default which shall be of no less than sixty (60) days duration.

9.17.3. **Meet and Confer regarding Notice of Default.** The Parties shall meet within fifteen (15) business days of any Notice of Default to resolve the issues specified in the Notice of Default. Defaults that are unresolved after the Parties meet and confer shall be resolved by the dispute resolution provisions of this Agreement as identified in Section 9.19.

9.17.4. **Cure.** The defaulting Party shall have no less than sixty (60) days to cure the default or demonstrate that the said Party is not in Default. If a Default cannot be reasonably cured within sixty (60) days, the Parties may submit the time to cure such default to mediation.

9.17.5. **Remedies.** The Parties shall have all rights and remedies available at law and in equity, including, but not limited to, injunctive relief and specific performance, provided, however, the Owner and Master Developer (and any Subdeveloper to the extent it assumes the rights or obligations of this MDA) agree that it will not seek monetary damages against the City or any of their elected or appointed officials, officers, employees, agents, representatives, engineers, or attorneys, on account of the negotiation, execution, or breach of this MDA. In the event of such legal or equitable action, each party to that action will bear its own costs and fees, including attorney fees. The rights and remedies set forth herein shall be cumulative and shall also include: (i) the right to draw on any security posted or provided in connection with the Planned Community and relating to remedying of the particular Default, and (ii) the right to withhold all further reviews, approvals, licenses, building permits and/or other permits for development of the Planned Community in the case of a

default by Master Developer, or in the case of a default by a Subdeveloper, development of those Parcels owned by the Subdeveloper until the Default has been cured. Additionally, the City shall not withhold the issuance of building permits to a Subdeveloper for any breach of this MDA by Master Developer.

9.17.6. **Public Meeting.** Before any remedy in Subsection 9.18.5 may be imposed by the City, the Party allegedly in Default shall be afforded the right to address the Council in a properly noticed public meeting regarding the claimed Default.

9.17.7. **Emergency Defaults.** Anything in this MDA notwithstanding, if the Council finds on the record that a default materially impairs a compelling, countervailing interest of the City and that any delays in imposing such a Default would also impair a compelling, countervailing interest of the City, then the City may impose the remedies of Section 9.18.6 without the requirements of mediation in Section 9.19.1 or a public meeting in Section 9.18.7. The City shall give Notice to Master Developer and/or any applicable Subdeveloper of any public meeting at which an emergency default is to be considered and the Master Developer and/or any applicable Subdeveloper shall be allowed to address the Council at that meeting regarding the claimed emergency Default.

9.18. **Dispute Resolution.** Defaults, Denials, or other matters subject to this MDA that are disputed by the Parties are subject to the following procedures of resolution.

9.18.1. **Meet and Confer.** Prior to mediation or arbitration as provided herein, the Parties to any dispute hereunder shall meet within fifteen (15) business days of a request to meet and confer to resolve the dispute. Disputes that are unresolved after the Parties meet and confer shall be resolved by the following dispute resolution provisions.

9.18.2. **Mediation of Development Application Denials, Defaults, and other Disputes.**

9.18.2.1. **Issues Subject to Mediation.** Except as provided in 9.19.2.1, all issues resulting from the City's Denial of a Development Application, Default by any of the Parties, or other matters that are disputed under this Agreement shall be mediated.

9.18.2.2. **Mediation Process.** If the Administrator and Applicant are unable to resolve a Denial, Default, or dispute, the parties shall attempt within ten (10) business days to appoint a mutually acceptable mediator with knowledge of the Denial, Default, or issue in dispute. If the parties to the Denial, Default, or dispute are unable to agree on a single acceptable mediator, they shall each, within ten (10) business days, appoint their own representative. These two representatives shall, between them, choose the single mediator. Within ten (10) business days after the selection of the chosen mediator, each party shall provide to the chosen mediator and the other party a position paper setting forth their respective positions, along with any relevant facts or circumstances. The chosen mediator shall, within fourteen (14) calendar days, review the positions of the parties to the Denial, Default, or dispute and schedule a mediation. The final decision of the mediator shall not be binding on the parties to the Denial.

9.18.3. Arbitration of Development Application Denials, Defaults, and other Disputes.

9.18.3.1. Issues Subject to Arbitration. Issues regarding the City's Denial of a Development Application, Default by any of the Parties, or other matters that are disputed under this Agreement that are subject to resolution by scientific or technical experts such as traffic impacts, water quality impacts, pollution impacts, etc. are subject to arbitration as set forth herein.

9.18.3.2. Arbitration Process. In connection with all issues described in 9.19.2.1, the parties shall within ten (10) business days appoint a mutually acceptable expert in the professional discipline(s) of the issue in question related to the Denial, Default, or dispute. If the parties to the Denial, Default, or dispute are unable to agree on a single acceptable arbitrator, they shall each, within ten (10) business days, appoint their own individual appropriate expert. These two experts shall, between them, choose the single arbitrator, which shall be an expert in the professional discipline of the issue in question related to the Denial, Default, or dispute. Applicant and the City shall equally share the fees of the chosen arbitrator. The arbitration shall be performed in accordance with the most recently enacted American Arbitration Association Commercial Arbitration Rules and Procedures. Within thirty (30) days after selection of the arbitrator, the parties to the Denial shall submit to the arbitrator a statement of their respective positions. The chosen arbitrator shall, within fifteen (15) business days after receipt of the position statements, review the positions of the parties regarding the arbitration issue and render a decision. The arbitrator's final decision shall be final and binding upon the parties.

9.19. Termination.

9.19.1. **Termination Upon Completion of Development.** This MDA shall terminate on the earlier of: (i) that certain date that the Planned Community has been fully developed and the obligations of the City, Owner, Master Developer, or any Subdeveloper in connection therewith are satisfied; or (ii) the expiration of the term as set forth in Section 9.6. Upon termination as set forth herein, Master Developer may request that the City record a notice that this MDA has been fully performed and therefore terminated as to the Planned Community.

9.19.2. **Termination upon Default.** This MDA shall be subject to termination by the City prior to the completion of the Planned Community following a judicial determination that a Default by Master Developer remains unresolved after notice and the opportunity to cure as provided herein.

9.19.3. **Termination upon Referendum or Legal Challenge.** The City acknowledges that Master Developer is under a contractual obligation under the County MDA to try to annex the Property into a municipality. The City further acknowledges that if this MDA and the annexation of the Property are terminated by Master Developer as a result of a pending referendum or legal challenge as identified in Sections 9.1.1 and

9.1.2, then Master Developer shall be deemed by the City to have complied with the annexation attempt requirements of the Master Development Agreement with Salt Lake County which permits the buildout of 6,330 units within Salt Lake County.

- 9.19.4. **Termination upon Continuation of County Development Agreement.** If the County, Special Owner, and Greater Salt Lake Municipal Services District have not approved an amendment to the County MDA to nullify or otherwise invalidate the County MDA before December 15, 2021, Master Developer and Owner may terminate this MDA, the zoning, the annexation, and any other related legislative actions. The City shall take such steps as are necessary to ensure that the Lieutenant Governor does not record the annexation and that the City Recorder does not record this MDA.
- 9.19.5. **Effect of Termination on Master Developer Obligations.** Judicial termination of this MDA with respect to the Planned Community shall not affect Master Developer's obligation to comply with the terms and conditions of any applicable zoning, subdivision plat, site plan, building permit, or other land use entitlement approved pursuant to this MDA with respect to any approved Planned Community. Termination of this MDA with respect to the Planned Community shall not affect or invalidate Master Developer's obligations under Subsection 9.14.
- 9.19.6. **Effect of Termination on the City's Obligations.** Upon any termination of this MDA with respect to the Planned Community, the entitlements, conditions of development, limitations on fees, and all other terms and conditions of this MDA and any amendments hereto shall no longer be vested by reason of this MDA with respect to any portion of the Planned Community then not subject to an approved Development Application, Phase, or Subdivision. Upon such a termination or expiration, the City shall no longer be prohibited by this MDA from making any changes or modifications to such entitlements, conditions, or fees applicable to such portions of the Planned Community that are not subject to an approved Development Application, Phase, or Subdivision.

9.20. **Titles and Captions.** All Section titles or captions contained in this MDA are for convenience only and shall not be deemed part of the context nor affect the interpretation hereof.

9.21. **Savings Clause.** If any provision of this MDA, or the application of such provision to any person or circumstance, shall be held invalid, the remainder of this MDA, or the application of such provision to persons or circumstances other than those as to which it is held invalid, shall not be affected thereby.

9.22. **Incorporation of Recitals and Exhibits.** All recitals stated above and all attached Exhibits A thru G shall be incorporated into and deemed a part of this MDA as though fully set forth herein, and the same shall be binding upon the Parties hereto.

9.23. **Force Majeure.** Any default or inability to cure a default caused by strikes, lockouts, labor disputes, acts of God, inability to obtain labor or materials or reasonable substitutes therefore, enemy or hostile governmental action, civil commotion, fire or other casualty, or any other similar causes beyond the reasonable control of the Party obligated to perform, shall excuse the performance by such Party for a period equal to the period during which any such event prevented, delayed or stopped any required performance or effort to cure a default in spite of the said Party's reasonable best efforts.

9.24. **Severability.** If any provision of this MDA is held by a court of competent jurisdiction to be invalid for any reason, the Parties consider and intend that this MDA shall be deemed amended to the extent necessary to make it consistent with such decision and the balance of this MDA shall remain in full force and affect. If this Agreement in its entirety is determined by a court to be invalid or unenforceable, this Agreement shall automatically terminate as of the date of final entry of judgment. If any provision of this Agreement shall be determined by a court to be invalid and unenforceable, any Party in good faith determines that such provision or provisions are material to its entering into this Agreement, that Party may elect to terminate this Agreement as to all of its obligations remaining unperformed and if any such termination causes any other Party to in good faith determine that the said termination adversely impacts the interests of said other Party, the other Party may also elect to terminate this MDA as to all of its obligations remaining unperformed.

9.25. **Estoppel Certificate.** Upon fifteen (15) business days prior written request by Master Developer or a Subdeveloper, the City will execute an estoppel certificate, to be prepared by the Master Developer or a Subdeveloper and in a form agreeable to the City, to any third party certifying that Master Developer or a Subdeveloper, as the case may be, at that time is not in default of the terms of this Agreement.

9.26. **Planned Community is a Private Undertaking.** It is agreed among the Parties that the Planned Community is a private development and that the City does not have any interest therein except as authorized in the exercise of its governmental functions. The Planned Community is not a joint venture, and there is no such relationship involving the City or the City's elected or appointed officials, officers, employees, agents, representatives, engineers, or attorneys. Nothing in this Agreement shall preclude the Master Developer from forming any lawful form of investment entity for the purpose of completing any portion of the Planned Community.

9.27. **Attorney's Fees.** In the event litigation is filed to enforce the terms of this MDA, the prevailing party in such litigation shall be entitled to receive its reasonable attorneys' fees and expenses from the non-prevailing party, subject to the limitations set forth in the Utah Governmental Immunity Act for property damages.

9.28. **Warranty of Authority.** The Parties to this MDA each warrant that they have all of the necessary authority to execute this MDA. Specifically, on behalf of the City, the signature of the City Manager is affixed to this MDA to lawfully bind the City pursuant to Ordinance No. _____ adopted by the Council on September 29, 2021. This MDA is approved as to form by the Herriman City Attorney.

Table of Exhibits

Exhibit "A"	Legal Description of the Property
Exhibit "B"	Land Use Master Plan
Exhibit "B-1"	Parks Master Plan
Exhibit "B-2"	Trails Master Plan
Exhibit "C"	Design Guidelines
Exhibit "D"	Traffic Impact Study
Exhibit "E"	City's Vested Laws
Exhibit "F"	Development Application Review and Approval Process
Exhibit "G"	Development Report

IN WITNESS WHEREOF, the parties hereto have executed this Agreement by and through their respective, duly authorized representatives as of the day and year first herein above written.

CITY
Herriman City

NATHAN CHERPESKI, City Manager

ATTEST

JACKIE NOSTROM, City Recorder

CHASE A. ANDRIZZI, City Attorney
Approved as to form and legality

OWNER

Signature: _____

Name: _____

Title: _____

MASTER DEVELOPER

Manager

CITY ACKNOWLEDGMENT

STATE OF UTAH)
)ss.
COUNTY OF SALT LAKE)

On the _____ day of _____, 2022, NATHAN CHERPESKI personally appeared before me, who being by me duly sworn, did say that they are the City Manager of Herriman City, a political subdivision of the State of Utah, and that the foregoing Master Development Agreement was signed on behalf of the City by authority of its City Council and said City Manager acknowledged to me that the City

STATE OF UTAH)
)
 :ss.
COUNTY OF SALT LAKE)

On the _____ day of _____, 2022, _____ personally appeared before me, who being by me duly sworn, did say that they are the _____ of YYY, L.L.C, a Utah limited liability company, and that the foregoing Master Development Agreement was signed on behalf of the Owner by authority of its governing board and acknowledged to me that the Owner executed the same for the purposes described therein.

STATE OF UTAH)
)
) ss.
COUNTY OF SALT LAKE)

NOTARY PUBLIC

Legal Description of Property

EXHIBIT B
Master Plan

EXHIBIT B-1
Parks Master Plan

EXHIBIT B-2
Trails Master Plan

EXHIBIT C
Design Guidelines

EXHIBIT D
Traffic Impact Study

A copy of the Traffic Impact Study is on file with the Herriman City Recorder

EXHIBIT E
City's Vested Laws

A copy of the City's Vested Laws (as of September 29, 2021) are on file with the Herriman City Recorder

EXHIBIT F
Development Application Review and Approval Process

Type of Approval	Approving Body
Single Family Home Building Permit	City Staff (with ARC certification of compliance)
Subdivisions for Individually Platted Residential Dwelling Units	City Staff (with ARC certification of compliance) ¹
Commercial Site Plans	City Staff (with ARC certification of compliance) ¹
Vertical Mixed-Use Site Plans	City Staff (with ARC certification of compliance)
Initial Conditional Use Permit	Hearing Officer ²
Modification to Initial Conditional Use Permit	Planning Commission
Home Occupation Permits	Planning Commission
Open Space Design	City Staff

¹ If adjacent to an Individually Platted Residential Dwelling unit that has been sold to resident, the Planning Commission review and approval is required.

² The “Hearing Officer” shall be the City’s “Appeal Authority” as that term is defined in Herriman City Code 10-3-5.

EXHIBIT G
Development Report

Application Number (for City use only)	
Date of Report	
Subdeveloper / Builder Name	
Total acres	
Type(s) of Residential Uses (select all that apply below and indicated in which place type(s) each is located)	
Single Family Homes:	
Townhomes:	
Condominiums:	
Apartments:	
Commercial Sq/ft	
Amount of Open Space (acres)	
	Proposed Open Space Improvements (list below)
Master Developer Acknowledgment:	
Subdeveloper Acknowledgment:	



LAGUNA

**DESIGN
GUIDELINES**

Design Guidelines

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1 - VISIONING LAGUNA

Laguna is focused on creating a premier community which blends the natural beauty of its mountain setting with excellence in architectural design. To reach this goal a combination of time proven fundamentals of design and the dynamics of new ideas and innovation is essential. The Design Guidelines have been broadened to expand the architectural horizon by continuing to evolve the Design Philosophy, and expand on the design character, as well as streamline and clarify the Review Process.

The design philosophy presented in these revised Design Guidelines will integrate the concept of Elements of Composition as the primary test of a design. The Elements of Composition will allow for a broader expanse of design that will be reviewed not only on quantitative elements such as square footage, height and setbacks, but also on qualitative elements such as the use of shade, shadow, and artistic composition. Together the process will allow for more design freedom with a review process that allows the architect to present his work in a language that is more sympathetic to the Art of Architecture.

The document will make the process easier to understand for owners and designers through increased clarity and ease of use. Rather than a static document, it is more accessible to users through its more interactive on-line presentation as well as increased clarity of processes and goals. Below is a brief synopsis:

1. The Design Guidelines section lays out the design requirements for all aspects of the home and site design and includes photographs and drawings to illustrate these goals.
2. The Design Review Procedures section lays out the specific requirements for design submittals and the process of the Design Review Committee in evaluating each submittal.
3. The Appendices have all the forms necessary to move through the entire process as well as supplemental information necessary to identify and clarify the Committee make-up, contact information, definition of terms, and other information which may be required or helpful in moving through the Design Review Process.
4. The Construction Guidelines have been extracted from the Design Guidelines and are now a separate document which is also available on-line or through a Committee Representative.



2 - THE DESIGN PHILOSOPHY and ELEMENTS OF COMPOSITION

For the Laguna Community to achieve a level of architectural excellence appropriate to its mountain setting, the entirety of its architecture and its landscape must work together in harmony. Many interpretations of this character are both anticipated and encouraged in each of Laguna's building structures and throughout each of its neighborhoods. Architectural excellence and unique sophistication are expected in every Laguna design. A consistently unified respect for natural wildlife and for the historic ranch environment so distinct to Laguna's character and vision must be honored as well.

The overall Design Philosophy of Laguna is based more on the excellence of the overall Architectural Composition rather than a series of elements the design can and cannot portray. Even though there are design elements that the design needs to adhere to, the design will be reviewed first on its overall Elements of Composition. The Elements of Composition are those elements which make a design truly excellent. The following 13 Elements of Composition should be evident in each design at Laguna.

Elements of Composition

1. **Site Integration:** Each Home within Laguna should be properly integrated into the setting. This includes proper siting within the setbacks and building envelop, topographic integration in established floor elevations that respond to the grade, adequate integration of drainage to respond to the existing natural and proposed future flows, and sensitive exterior material finish selection.
2. **Scale:** All Homes within Laguna must be appropriately scaled relative to the size of the Lot and the vertical massing relative to the site context. In general, the scale for each Home shall be as small as possible.
3. **Proportion:** Each design element of the Home has an inherent proportional relationship to the other, and to the entire structure. This includes, but is not limited to: windows, doors, fascia details, columns or posts, entry areas, exterior walls, site walls and so on. The goal is for every Home to be well composed and designed with all design elements appearing in proportion to each other and to the whole composition.
4. **Rhythm:** Rhythm refers to the regular or harmonious recurrence of overall forms, window or door openings, roof or fascia lines, structural support elements, or other shapes, colors, or materials. Architecture should exhibit a semblance of rhythm, including sequence by size, shape or pattern, or even random by proximity or similarity of forms.

-
5. **Balance:** Balance in architectural design is measured by the overall composition of visual forms, the exterior material placement and integration, the proportion of window area to wall mass and the composition of the building masses.
 6. **Color:** The use of color as a complement to the design and the overall context is extremely important. Homes designed with consideration for color application from the start can use more interesting and sophisticated compositions than designs that apply color at the end of the design process. Laguna seeks to support the use of color beyond the simplified applications, to create a diversity of color use that adds character to individual Homes and to the entire Community while all keeping with the historic palette of colors traditionally used on buildings throughout the Wasatch Range.
 7. **Texture:** The bright Utah sun reflects a greater amount of light off smooth surfaces, so a rich and varied palette of textures is desired to minimize the reflectivity of walls and roofs. Dramatic or bold texturing must be controlled, as it can be equally disruptive to the visual environment. A random subtle texturing is preferred to a visually distracting repetitive pattern created by unintended texture.
 8. **Shade/Shadow:** A vital component of design is the use of depth in architectural design and detailing to compensate for the high mountain sun. Without attention to this element of design, a Home may be incompatible with the mountain context. A transitional space or architectural features such as a large roof overhang, or trellis from the outside to the inside, is a necessary component augmenting the visual appeal and livability of the Home. Also, depth in each window or door opening adds value to the perceived quality of the Home.
 9. **Material Integration:** The Design Guidelines stipulate specific criteria regarding the allowable type and placement of exterior materials. The purpose of this element as part of Design Integrity is to ensure that in addition to providing the correct type and amount, artfulness in overall composition is also achieved. The combination of textures shall be complementary rather than competing. Colors shall be compatible, and their placement must enhance the other elements of Design Integrity such as balance, appropriateness or visual strength.

10. **Integrity/Visual Strength:** The overall integrity of a design is measured in its visual strength or in how well all the components look and feel when assembled together. A well-composed Home that has excelled in all design elements listed here will have great visual strength.
11. **Appropriateness:** The degree of diversity of individual design expression will be measured against the stated goals for the overall character of the various neighborhoods within Laguna. Some individual designs may be deemed inappropriate or incompatible with the goals for Laguna and are not necessarily a reflection of the quality of the design. Appropriateness also applies to all other elements listed here with regard to the components being compatible in scale, material, color selection, and so on.
12. **Artistic Endeavor:** This element recognizes that the criteria presented in these guidelines are not intended to inhibit the overall artistic quality of a design submission. A design submission may be exempted from particular criteria if the design successfully incorporates all other elements contained herein. The exception must not cause an undue negative impact to another individual property or the Community as a whole.
13. **Sustainable Design:** Any Home built at Laguna should reflect in its architectural composition sustainable design. Many tools are available to designer to achieve sustainable design and the simplest ones should be utilized first. More complex or highly visible technology should be considered last, but when utilized must be artfully integrated.



3 - HOMESITE DESIGN AND PLANNING GUIDELINES

The climate, terrain, and existing vegetation at Laguna are all important factors to be considered in the designing of any improvements to properties within the Community. The following guidelines are intended to ensure environmentally sound and aesthetically pleasing development at Laguna, which will mutually benefit all Laguna members.

3.1 The Building Envelope Concept

The building envelope concept is a major component of the philosophy behind designing and planning improvements on each individual Homesite. The building envelope is the portion of each Homesite within which all improvements; including, but not limited to any and all building projections, structures, decks, walks, landscaping improvements, grading, fencing, and all mechanical equipment, must be located, as this envelope is the only area of the Homesite where alterations or disturbance to the natural landscape (other than the supplemental planting of native vegetation which has been specifically approved by the Committee) may occur. The specific building envelope for each Homesite, as indicated on the building envelope exhibit that is given to each Owner at the time of Lot purchase from the Laguna Developer, is designed to protect and preserve the natural landscape features of the Homesite and preserve views from adjacent Homesites. Limited encroachment outside of the prescribed building envelope may only be considered for approval by the Committee where unique terrain, vegetation constraints, and/or limited Homesite width may warrant such encroachment. Under any of these limited circumstances, such encroachment will still be subject to applicable setback requirements. The Committee may, in its sole discretion, allow reconfiguration of the building envelope.

3.2 Homesite Work

No excessive excavation or fill will be permitted on a Homesite unless the Committee has specifically approved such excavation or fill because of terrain considerations. Ordinarily, the amount of cut and fill must be balanced with the minimal use of retaining walls and engineered building pads.

The clear cutting of vegetation within any building envelope will not be permitted; however, some selective pruning and/or the removal of trees and shrubs is necessary for developing any Homesite. Keep in mind that any cutting of trees or vegetation must be pre-approved by the Committee. If an Owner removes vegetation without Committee approval, such Owner shall be responsible for paying to promptly restore all vegetation removed with materials of like kind and size and shall be subject to a minimum \$2,500.00 penalty fine.

The Committee will closely monitor the design of Homesite improvements around existing vegetation, to ensure that all root systems remain intact and that the water supply to all vegetation is appropriately maintained.

33 Grading and Drainage

All grading and drainage work on a Homesite must comply with the approved master grading and drainage plans for Laguna. All Homesite grading and drainage work can only disrupt the Homesite minimally, as the work must not alter natural runoff drainage patterns or create any conditions that could lead to unnecessary soil erosion. In specific cases, the Committee may allow a portion of a drainage way to be re-routed within the Homesite's building envelope, but this allowance should not be assumed in all cases. The Committee may deny moving a drainage way for many reasons, which may include but are not limited to the following: the movement possibly causing a loss of vegetation, however minimal; the movement becoming an eyesore, or the movement causing civil engineering complications. As well, any drainage easements defined on a Recorded Plat may not be relocated without appropriate City of Herriman approval(s).

Sound construction and grading practices must be used to implement Homesite surface drainage. Any improvement that creates an obstruction to surface flows and/or causes storm water to back up onto a neighboring land tract or Homesite is strictly prohibited.

All ground floor levels on a Homesite should occur at a vertical elevation that allows for the final placement of backfill, walkways, driveways, and porches to produce positive drainage which moves away from the structure in all directions, while such backfill remains within the building envelope (as such envelope is described in Section 3.1 of the Design Guidelines) on the Homesite always. On hillside Homesites, the Committee recommends including foundation waterproofing and a perforated pipe foundation drainage system along the uphill and side hill foundation walls.

For sloping Homesites with a natural grade elevation variation greater than three (3) feet across the footprint of the proposed structure, the Committee requires residential design solutions to incorporate slope considerations, so the structure will step upward or downward with the natural slope. On sloped Homesites, the Committee will not approve any artificial terracing that creates an engineered pad suited to accommodate a "flat" Homesite Design.

When cut/fill operations are required, the slopes must have at least a four to one (4:1) ratio to allow for natural revegetation. If cut and fill slopes are at all steeper than the four to one (4:1) ratio, the Committee will require a pre-approved retaining wall to be built on the slopes.

During the construction phase, all Builder(s) shall take appropriate measures to eliminate erosion. Section 1.9 of Construction Regulations outlines the specific in-the-field grading and drainage requirements which all Owners shall be responsible for ensuring their Builders complete to accomplish effective erosion elimination, and Section 1.9 also explains when those requirements must be met.

34 Access Drives

Driveway surfaces are the only improvement allowed outside the building envelope, except for underground utilities servicing the Homesite; thus, driveway designs are carefully analyzed and regulated by the Committee. Each Homesite may be accessed by a single or a shared driveway as detailed below. Circular drives are generally not allowed unless they enter and exit the building envelope at a single point. Access drives shall always be located so they preserve and avoid disturbing important natural features, such as large or significant plant materials, drainage ways, and/or rock outcroppings; and such drives shall always minimize disruption of the existing landscape as well.

The Wildland Fire Program, which is included as Exhibit L of the Development Agreement, mandates the following as related to driveways in Laguna (Driveways exceeding the maximum limits must be approved by the Fire Department.):

“The maximum grade of any driveway may not exceed 10 percent. However, 12 percent grades may be allowed for a maximum of 250 lineal feet. Driveways exceeding these parameters shall be heated. The minimum width of any driveway shall be 12 feet. All driveways over 150 feet whether or not locked by a gate shall include an approved turn-around for emergency vehicles where the driveway meets the building pad and every 400 feet for long driveways. The minimum unobstructed vertical clearance shall be 13 feet 6 inches. unobstructed vertical clearance for any and all driveways shall be 13 feet six (6) inches.”

As well, the graded/paved surface of a single access driveway shall not exceed 14 feet in width where it crosses the road right-of-way, nor shall the driveway exceed this 14-foot width anywhere between its crossing the front setback of the Homesite and its connecting to the street pavement. Shared driveways may be up to 18 feet in paved width in these same areas.

The Committee will closely evaluate every driveway in relation to its applicable building envelope, to all applicable rights-of-way, and to the applicable overall Homesite Design. Driveways and garage

apron areas need to be certain that back up conditions realistically work for large vehicles to avoid driveway conditions that prove unworkable once the owner occupies that house and would need to be later modified.



The Committee must also approve the proposed driving surface of every driveway at Laguna. Driveways are encouraged to be made of colored and exposed aggregate concrete, pavers, decorative concrete systems such as Bomanite, or other pattern/texture methods. No uncolored concrete is permitted. Asphalt is allowed as a driveway material; however, the Committee, in its sole discretion, may require any asphalt drive to have an attractive, finished edge made of concrete, pavers, or another material acceptable to the Committee.



Where necessary, the Owner shall be responsible for installing a concrete or metal culvert pipe (with a diameter of 18 inches or greater) beneath each access driveway—between the road shoulder and the property line—unless otherwise approved by the Committee. In some cases, an 18-inch pipe may be too large to install because of Homesite conditions. If this is the case, the Committee will

consider allowing the following alternative: Instead, the invert flowline of the pipe shall be aligned and sloped so that ditch/drainage way storm flows will continue smoothly and unimpeded beneath the driveway crossing. The exposed ends of the pipe shall be aesthetically finished with stone headwalls, which must be made of a Committee-specified stone type and which must be laid according to the Laguna standard. A construction design detailing the headwall must be supplied to the Committee for pre-approval prior to installation.

35 On-Site Parking

Each Homesite must have an area within the building envelope that accommodates parking for two (2) guest automobiles (by providing each a parking space that is at least 9 by 18 square feet).



Owners possessing buses, non-conventional or oversized trucks, motor homes, campers, boats, trailers, motorcycles, or any other motorized vehicle other than a conventional automobile, shall store or park these vehicles within an enclosed garage, so they are completely hidden from view. Any outside parking of motor homes, buses, or any other large recreational or non-conventional vehicles is prohibited at all times within Laguna, even when loading and unloading.

As a rule, no on-street parking will be permitted at Laguna. Upon written request by the owner of a Lot, the Conservancy may, in its sole discretion and on a case-by-case basis, pre-approve temporary, non-construction related parking and/or on-street parking by guests (i.e. landscaping maintenance, party guests, etc.). Parking for all construction vehicles must be contained on the Homesite where construction is occurring (Refer to Construction Regulations Section 1.7 for further clarification regarding temporary, overflow construction parking). Parking on the street may be ticketed by the

Conservancy and may warrant a fine in the amount the Conservancy, in its sole discretion, deems appropriate. Any such ticket and/or fine will become a lien upon the Lot which the person(s) responsible for the inappropriately parked vehicle are visiting.

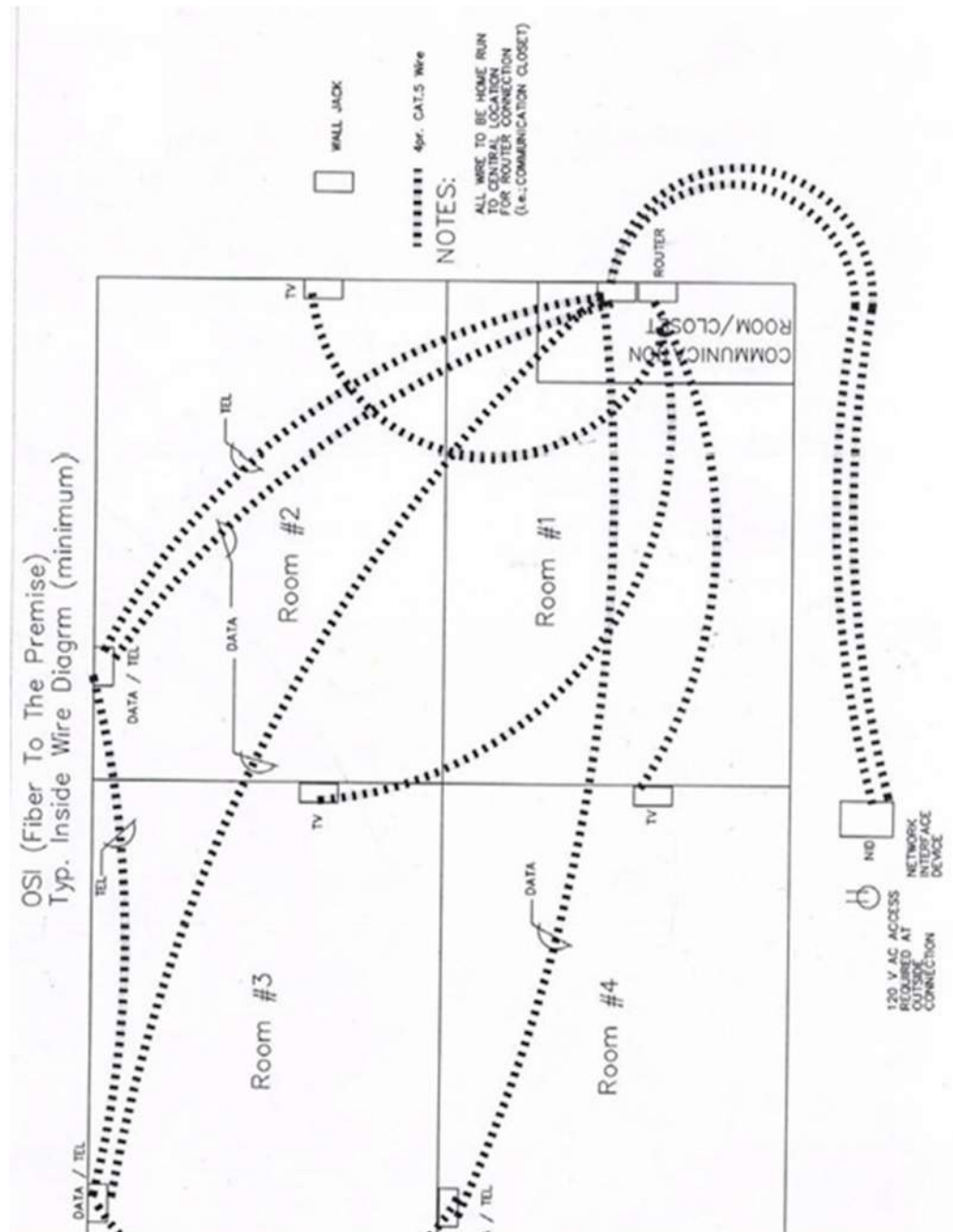
3.6 Utilities

Utility service lines (e.g., water, sewer, gas, electricity telephone and cable) are located in the street right of way or an easement adjacent to the front property line of each Homesite. Each Owner is responsible for extending all utility services from their location adjacent to their homesite to the residence and for making sure this extension is routed, so as to minimize disruption to the natural landscape. Utility trenches may never encroach into any required setback, except where they initially travel from the service tap into the building envelope and must cross the natural area of the Homesite in order to do so. In most cases, this utility access to the building envelope should be located where the driveway enters the property. All utility water readouts shall be located on an exterior building wall or another easily accessible location specified by the Committee so that they provide for seeable reading. All utility boxes should, however, be appropriately buffered and screened (i.e. painted to match the wall surface on which they are mounted and screened with a wall to match adjacent building materials, or surrounded by appropriate screening landscaping as pre- approved by the Committee), so as to prevent direct view from the street, from adjacent Lots, from Open Space(s), and from Common Area(s).



All disturbed areas of the Homesite must be restored as closely as possible to their natural condition. Information regarding utility connection procedures may be obtained by contacting the respective utility companies directly. Owners may contact the Laguna Sales Staff and/or the Laguna Conservancy for utility companies' current contact information.

Each Owner intending to connect his home to technology utility services (including telephone, cable television, telecommunication services, security mechanisms, and/or any other systems for sending/receiving data and other electronic signals) must do so through Laguna's telecommunications carrier. These Owners must meet or exceed the Laguna Developer's minimum residential wiring system standards, which standards are illustrated below:



The placement of all utility boxes and equipment shall be pre-approved by the Committee. Refer to Section 3.9.

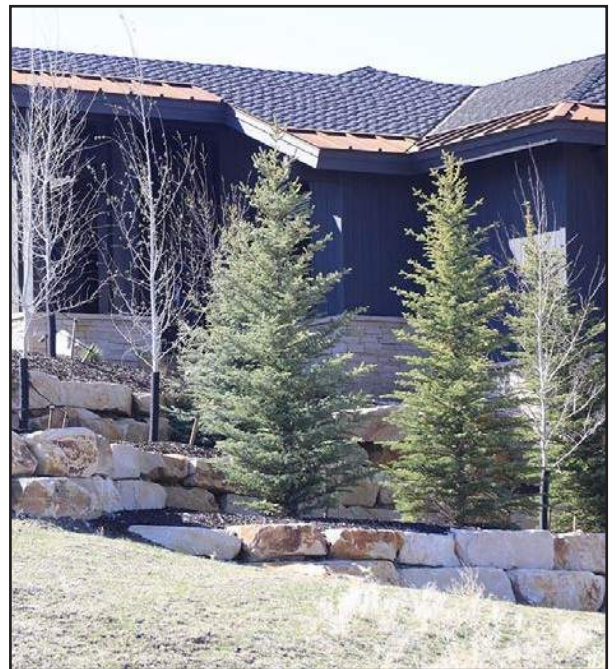
3.7 Walls and Fencing

Walls and fencing are strongly discouraged except for privacy for terraces or dog runs. A homesite that demonstrates a need for walls and/or fences must design them so they are a visual extension of the residence by using similar materials and finishes. In no case will Homesite walls or fences be permitted to arbitrarily delineate the building envelope, although such walls or fences may be used to define pet runs, small yards, courtyards, or terraces that are near the residence for privacy purposes. These privacy or screen walls must not exceed 6 feet in height when measured from existing natural grade; and again, they may not encroach outside the building envelope. Fencing material must be made of wood, metal or stone matching that used on the residence.



Retaining walls may not exceed an above-grade height of six (6) feet, when measuring from the lowest grade point (regardless of whether the grade is natural or finished). Where the overall height of retained earth exceeds 6 feet itself, multiple terraced retaining walls must be used. In these multiple terraced walls, each tier must be separated by a six (6) foot planting area. As well, these tiered retaining walls cannot exceed 12 feet above the lowest grade point (regardless of whether the grade is natural or finished). All retaining walls must jog in plane for a depth of at least four (4) feet for every 20 feet they extend in the horizontal direction. No retaining wall can ever exceed a maximum length of 80 feet.

Retaining walls may be constructed of natural boulders, gabion, cast concrete, or of concrete masonry units; however, all the walls' exposed surfaces and edges must be made of stone or stone veneer that will unobtrusively blend in with the natural surroundings. In some cases, Corten steel or equal, veneered or heavy timber wood retaining wall systems may be approved. Certain types of textured concrete block may be allowed if the same block is used on the home as well. However, keystone and/or pre-manufactured retaining wall systems will not be approved.



38 Outdoor Storage

Any outdoor areas which house trash containers, firewood, maintenance/service equipment (i.e. snow blowers, etc.), or overflow home storage must be screened from all adjacent properties by either a wall or a fence. However, firewood alone may be kept in an unscreened, inconspicuous location if it is neatly stacked and if the only covering used for it is a clear plastic sheet.

39 Mechanical Equipment, Electrical Meters, Gas Meters, and Irrigation Meters

No roof mounting or wall mounting of mechanical equipment will be permitted. Any exterior mechanical equipment utilized must be mounted to the ground adjacent to the residence and must be hidden from view by walls (or a combination of walls and evergreen landscaping that is acceptable to the Committee, in its sole discretion) that are high enough to fully screen such equipment. All parts of the equipment and the enclosure must be contained within the building envelope. This equipment should be situated with the intent of minimizing noise intrusion to any adjacent Homesite(s) and/or those Homesites' outdoor living spaces.

All electrical meters, gas meters, and irrigation meters must be screened from the street, and all adjacent Homesites with a wall (or a combination of wall and evergreen landscaping that is acceptable to the Committee, in its sole discretion) which is high enough to do so. Every Owner shall be responsible for seeing that he/she and/or his/her Builder contacts the electric company for requirements concerning the placement of such screen walls and any related landscaping that has been pre-approved by the Committee. Non-evergreen landscaping will not be sufficient to satisfy this screening requirement. As well, evergreen landscaping will only be permitted to screen the equipment when it is used along with walls and when it has been specifically pre-approved by the Committee. Screening with proper walls is preferred at Laguna, and such wall screening shall always be required, except in specific cases where the Committee deems evergreen landscaping more appropriate.

The placement of all utility boxes and equipment (attached to a wall or ground mounted) shall be pre-approved by the Committee during Design Review (as part of the landscaping plan submittal, if such equipment is ground mounted) and in the Pre-Construction Conference (Chapter 1 of the Design Review Procedures and Architectural Review Committee Organization) which takes place prior to the construction of any improvements on the Homesite. Such utility equipment shall not be installed by any Owner or Builder until the Committee has approved its specific location on the Homesite, its pedestal mounting (where that is applicable), and any and all landscape buffering required to conceal it from the views of neighboring Homesites, Common Areas, Open Spaces, and roadways.



3.10 Storage Tanks

All fuel tanks, water tanks, or similar storage facilities must be either completely shielded from view by walls (or similar structures) or installed underground. Since natural gas is provided to all lots no fuel storage tanks should be necessary.

3.11 Antennae and Satellite Dishes

No satellite dishes or television/radio aerials or antennas may be installed if they are not fully screened from any roadway, adjacent Homesite(s), Open Space(s), or Common Area(s) or painted to match the adjacent home surfaces. Umbrella coverings over satellite dishes are strictly prohibited, as screen walls must be used to block them from view.

No circular satellite dish may be installed that is larger than 18 inches in diameter, and no oval-shaped satellite dish may be installed that is larger than 20 inches in diameter; unless the Committee specifically pre-approves otherwise. Antennae may only be mounted in locations on homes which are specifically pre-approved by the Committee and all antennae must be painted to match the exterior surface of the home. Unless otherwise approved by the Committee (i.e. in locations where ground mounting is unfeasible or where ground mounting would be more unattractive than building mounting), satellite dishes must be pre-approved by the Committee in size and placement and must be mounted to the ground. All satellite dishes must either be ground-mounted and screened from adjacent Homesites, Common Area(s), Open Space(s), and/or roadway views or must be mounted on the residence in such a location and be painted so as to minimize visibility from adjacent Homesites, Common Area(s), Open Space(s), and/or roadways.

Removal of trees to improve reception is prohibited. Any and all walls used for screening any satellite dish must be an integral component of the Homesite Design, and such walls must be pre-approved by the Committee. In some cases, a satellite dish may not be approved because of factors such as its proposed location on the Homesite and/or the visual consequences caused by such location (e.g. disruption of the overall street scene or creation of an eyesore to adjacent Homesites, Common Area(s), Open Space(s), roadways, etc.).

3.12 Signage and Address Identification

All Laguna addresses will be identified according to a standard scheme. All Owners shall be responsible for installing, at the individual Owner's expense, one (1) standard Laguna address identification sign, containing address numbers only, which is visible from the street. Additional

illustrations, graphics, logos, street names, owner names, and/or other images are not allowed. Details about the standard to be used for such address identification for every residence (i.e. numeral type, color, and placement on the Homesite) are as follows:

1. The numbers shall be made of high cast metal and contrast with the background, shall be subject to Fire Department approval, and shall be three (3) to four (4) inches in size.
2. The numbers shall be flush mounted directly to the wall, by using threaded studs set in adhesive between the wall and the letters.
3. In lieu of address numbers being attached to the home, a landscape address boulder may be allowed, if pre-approved by the Committee. The boulder shall be native in appearance, be located within the building envelope for the lot, and (at its smallest dimension) be as wide and deep as it is tall, to avoid a “tombstone” -like appearance. The boulder must also be cushioned into and made integral with the grade and landscape on which it sits and shall include adjacent landscaping to soften its appearance (size, type, and location to be approved by the Committee). The address numbers, if not clearly etched into the boulder, shall comply with the above requirements. The committee will review requests for address boulders based on the context of the neighborhood so that the boulders do not appear unnatural. If too many lots have similar boulder conditions not every lot will be allowed to have one.

The Owner shall be responsible for indicating compliance with the above Committee specifications before Final Approval on his/her Homesite Design will be granted, and such Owner shall install the approved address identification prior to the Committee granting Final Release on a Homesite. No additional signage of any kind will be permitted, except for the temporary construction sign provided by each Builder and/or directional signs provided by the Developer. Real estate sale and/or lease signs are prohibited. Installation of any kind of driveway markers is prohibited as well.



3.13 Lighting

The Developer may employ a low level, uniform street lighting scheme for safety purposes (except where a higher level of lighting is required for public safety in the judgment of the City of Herriman Engineer). For the purpose of maintaining a dark sky, no additional lighting (with the exception of soft halo lighting on street addresses identification where such lighting is specifically pre-approved by the Committee) may be installed by the Owner anywhere which is outside of the building envelope or adjacent to the street right-of-way.

Additional site lighting is permitted within a building envelope, provided such lighting does not result in any kind of excessive glare toward the street, toward neighboring properties. All exterior lighting sources must have a low level, subdued intensity; must be fully shielded; must be facing downward; and must be pre-approved by the Committee.

All external light fixtures must have frosted or heavily seeded glass, so that the light source (i.e. the bulb) is not visible at all. Security lighting must also be shielded in the same way and may only be installed if it is connected to a timed motion detector. No wall wash type of lighting is ever permitted at Laguna.

3.14 Swimming Pools, Spas, and/or Hot Tubs

If any swimming pools, spas, or hot tubs exist on the Homesite, they must be designed so they appear as a visual extension of the residence (by using walls or decks), and they must be shielded from view. All pools and spas must be constructed according to City of Herriman regulations. As well, if the hot tub is above-ground, it must be completely buffered, either by being recessed or concealed from view by walls that are an integral part of the Homesite Design. All pool/spa-related equipment (i.e. pumps, motors, and heaters) must be fully screened from street views and from adjacent Homesite, roadway, Open Space, and/or Common Area view(s). Any installation of a pool, spa, and/or related equipment is subject to pre-approval by the Committee and shall be undertaken in strict compliance with all conditions established by the Committee.

3.15 Tennis, Sport Courts, and Basketball Goals

Due to the extensive area required for tennis or other hard-surfaced sport courts, such courts will not be permitted. Wall-mounted or free-standing basketball goals may be allowed adjacent to patios and/or driveways, but they must be pre-approved by the Committee.

On every freestanding basketball goal, support posts must be painted so they blend unobtrusively into the surrounding visual background, and the backboard must be clear. Portable basketball hoops must always be stored inside the garage when they are not being used.

3.16 Play Structures

On a case-by-case basis, play structures, trampolines, swing sets, slides, or other such devices may be allowed if they are proposed to and pre-approved by the Committee, in its sole discretion. Such structure(s) must be placed within a fenced section of the rear yard and must not exceed a height of 8 feet. The Committee will only approve the structure(s) if they are constructed and finished with materials which complement their design in type and color and if such structure(s) follow the intent of the Guidelines. Generally, materials such as timber or darkly colored, powder-coated steel will be approved for the structure(s) if such structure(s) are in an inconspicuous portion of the building envelope; are largely screened from adjacent street, Open Space, and neighboring Homesite views; and are compatible with the overall Homesite Design. Plastic and/or brightly colored/finished materials will generally not be approved for such structure(s).

3.17 Approved Plant List

The Committee has approved a list of plants and trees deemed to be inherently compatible with Laguna's natural landscape, including both indigenous and non-indigenous species. Landscaping of all Laguna areas is expressly limited to these enumerated species. When grasses are used, they must be a type which is enumerated in the Approved Plant List as well, and they may not become a dominant component of the landscape. Any grassy area(s) must be shaped in some organic manner, rather than simply being rectangular or square- shaped; must be shielded from any roadway, Common Area(s), Open Space(s) and/or neighboring Homesite views to the extent possible; and must be edged with natural wild grasses so they blend naturally back into the native surroundings. In other words, the edges of these areas must be naturalized, and they shall not transition directly into the native landscape.

COMMON NAME	BOTANICAL NAME
EVERGREEN TREES	
Rocky Mountain Juniper	Juniperus scopulorum
Colorado Spruce	Picea pungens

COMMON NAME**BOTANICAL NAME****DECIDUOUS TREES**

Rocky Mountain Maple

Acer glabrum

Boxelder

Acer negundo

Thinleaf Alder

Alnus tenuifolia

Shadblow Serviceberry

Amelanchier canadensis

Common Hackberry

Celtis occidentalis

Beechleaf Mountain Mahogany

Cercocarpus montanus

Desert Willow

Chilopsis linearis

Narrowleaf Cottonwood

Populus angustifolia

Aspen

Populus tremuloides

Chokecherry

Prunus virginiana melanocarpa

Gambel Oak

Quercus gambeli

Smooth Sumac

Rhus glabra

Staghorn Sumac

Rhus typhina

Rose Locust

*Robinia neomexicana***EVERGREEN SHRUBS**

Greenleaf Manzanita

Arctostaphylos patula

Emerald Green Manzanita

Arctostaphylos santii

Running Serviceberry

Amelanchier stolonifera

Curleaf Mountain Mahogany

Cercocarpus ledifolius

Silverberry

Eleagnus commutata

Mormon Tea

Ehhedra viridis

Red Yucca

Hesperaloe parviflora

Common Juniper

Juniperus communis

Utah Juniper

Juniperus osteosperma

Rocky Mountain Juniper

*Juniperus scopulorum***DECIDUOUS SHRUBS**

Alder

Alnus incana

Saskatoon Serviceberry

Amelanchier alnifolia

Utah Serviceberry

Amelanchier utahensis

False Indigo

Amorpha fruticosa

Big Sagebrush

Artemisia tridentata

Mountain Big Sage

Artemisia tridentata vaseyana

Wyoming Big Sage

Artemisia tridentata wyomingensis

Martin Ceanothus

Ceanothus martinii

Tobacco Brush

Ceanothus velutinus

COMMON NAME

BOTANICAL NAME

DECIDUOUS SHRUBS (Continued)

Rubber Rabbitbrush	Chrysothamnus nauseosus
Douglas Rabbitbrush	Chrysothamnus viscidifloris
Red Osier Dogwood	Cornus sericea "Baileyi"
Western Hazlenut	Coryus cornuta californica
Cliffrose	Cowania mixicana stansburiana
Winterfat	Eurotia lanata
Rock Spirea	Holodiscus domosus
Shrubby Cinquefoil	Potentilla fruticosa
Alpine Currant	Ribes alpinum
Mountain Mahogany	Cercocarpus montanus
Woods Rose	Rosa woodsii
Blue Elderberry	Sambucus caerulea
Elderberry	Sambucus canadensis
Buffaloberry	Shepherdia argentea
Mountain Snowberry/Coralberry	Symphoricarpos oreophilus

PERENNIALS

Hollyhock	Alcea rosea "Chater's Double"
Filigree Daisy	Anthemis marschalliana
Rocky Mountain Columbine	Aquilegia caerulea
Western Columbine	Aquilegia formosa
Prickly Poppy	Argemone munita
Poppy Mallow, Wine Cups	Callirhoe involucrata
Native Bluebells	Campanula rotundifolia
Bachelor Button	Centaurea dealbata "Rosea"
Keys of Heaven, Red Valerian	Centranthus ruber
Chicory	Cichorium intybus
Western Virgins Bower	Clematis ligusticifolia
Trailing Daisy	Erigeron flagellaris
Sulphur Flower	Eriogonum umbellatum
Stork's Bill	Erodium cicutarium
California Poppy	Eschscholzia californica
Blue Fescue	Festuca ovina glauca
Blanket Flower	Gaillardia aristata
Burgundy Blanket Flower	Gaillardia grandiflora
Dwarf Blanket Flower	Gaillardia grandiflora "Goblin"
Chilean Erens, Prairie Smoke	Geum triflorum

COMMON NAME**BOTANICAL NAME****PERENNIALS (Continued)**

Curlycup Gumweed	Grindelia squarosa
Snakeweed	Gutierrezia serothae
Common Sunflower	Helianthus annuus
Hairy Goldenaster	Heterotheca villosa
New Mexico Hops	Humulus lupulus neomexicanus
Yellow Flax	Linum flavum compacta
Blue Flax	Linum lewisii
Blackfoot Daisy	Melampodium leucanthum
Beebalm, Horsemint	Fistulosa
Mexican Evening Primrose	Oenothera berlandierri
Penstemon	Penstemon barbatus
Firecracker Penstemon	Penstemon eatonii
Pine Leaf Penstemon	Penstemon pinifolius
Rocky Mountain Penstemon	Penstemon strictus
Rock Goldenrod	Petradoria pumila
Mexican Hat	Ratibida columnifera
Wooly Mullein	Verbascum bombyciferum "Arctic Summer"
Common Mullein	Verbascum thapsus

GROUND COVERS

Kinnikinnick	Arctostaphylos uva-ursi
Creeping Oregon Grape	Mahonia repens
Dwarf Mountain Lover	Pachistima canbyi
Mountain Lover	Pachistima myrsinites

GRASSES

Western Wheatgrass	Agropyron smithii "Arriba"
Western Wheatgrass	Agropyron smithii rosanna
Mountain Brome	Bromus marginatus
Mountain Brome	Bromus Carinatus
Mutton Bluegrass	Poa fendleriana
Idaho Fescue	Festuca idahoensis
Sheep Fescue	Festuca ovina
Creeping Red Fescue	Festuca rubra
Perennial Ryegrass	Lolium perenne

3.18 Prohibited Plants

Unless a plant is approved by the Committee and specifically listed in the Approved Plant List, such plant is prohibited. Requests by Owners to add plants they feel are worthy of consideration to this Approved Plant List may be made to the Committee. But again, it will be the ultimate decision of the Committee, in its sole discretion, to choose to honor such request. Any plant which is not specifically listed in the Approved Plant List shall be prohibited on Laguna Homesites, except on a case- by-case basis, where the Committee has pre-approved such plant as part of the Landscape Plan which was submitted for the Homesite.

3.19 Homesite Restrictions

Except for compounds which result from the combined development of two (2) or more Homesites, no more than one (1) residence may be constructed on any Homesite. Other outbuildings (i.e. detached garages) may be constructed, but only if they are a visual extension of the main residence. Such “complexes” are always subject to Committee pre-approval.

3.20 Fire Prevention Thinning

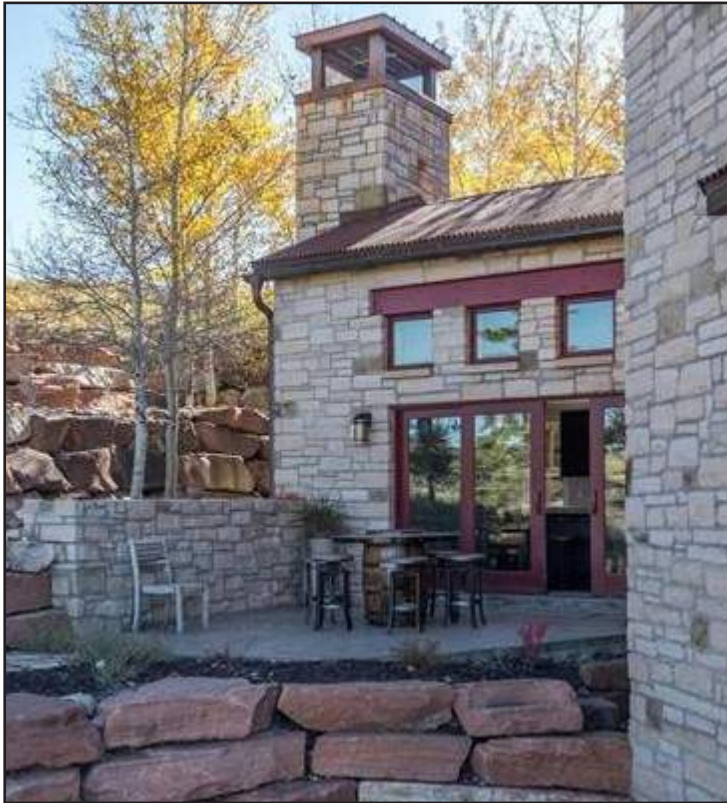
The Transitional Area of the Homesite is defined as the area (either inside or outside of the building envelope) where fire prevention thinning is required by the Wildland Fire Program for Laguna or where other applicable fire prevention regulations may occur. Removing native vegetation down to raw earth for the purpose of fire prevention thinning is not allowed at Laguna, except where otherwise required by the Fire Department. When native vegetation is removed within the Transitional Area, it must always be replaced with such landscape material as is listed in Section 3.17.

3.21 Fire Department Restrictions

Please note that the Fire Department and the City of Herriman require homes to use noncombustible exterior material for a height of at least four (4) feet anywhere the home touches natural and/or finished grade, except where the material is immediately above a hard-surfaced patio and/or driveway.

This requirement does not mean only the base 4 feet of the home can be the same noncombustible material. The material must be integrated vertically into the design so as to not give the appearance that house has been ‘dipped into a material’.







4 - ARCHITECTURAL DESIGN STANDARDS

The following architectural design standards are meant to reinforce and help define the concepts described within the Elements of Compositions in addition to complying with certain requirements of the City of Herriman.

4.1 Building Size

The goal of all Owners, Architects, and Builders who are designing and constructing homes within Laguna should be to create the highest quality homes within the smallest possible volume, without depriving Owners of a legitimate need for space. The natural land forms which are currently dominant at Laguna should remain that way. The existing quiet mountain repose and natural harmony so unique to Laguna can only be maintained if all constructed homes, improvements, and landscaping remains subservient to and naturally blends into existing landforms and landscape.

All Owners shall be responsible for adhering to all square footage limitations required by these Guidelines and all applicable Governing Documents, and/or the applicable Recorded Plat.

Most importantly though, every Owner intending to build a home at Laguna shall be responsible for correctly completing the Design Review process and for properly submitting the complete proposal for his/her Homesite Design to the Committee for all required reviews and approvals. In this spirit, Design Review ensures that Homesites within Laguna always maintain an unmatched level of architectural expertise, as well as ensuring that they adhere to both City of Herriman and Community standards and requirements.

4.2 Prefabricated Buildings

Buildings which are constructed off-site (either in whole or partial assembly) and so require transportation as such to a Homesite will not be permitted at Laguna. These buildings may include but are not limited to the following: mobile homes, stock modular buildings, and any other structure requiring transportation and set up in a partially completed state. Structures assembled off-site and then completely disassembled for transportation (i.e. log-system homes) may be permitted. Any and all such structures are subject to the Committee's architectural and aesthetic review and prior approval.

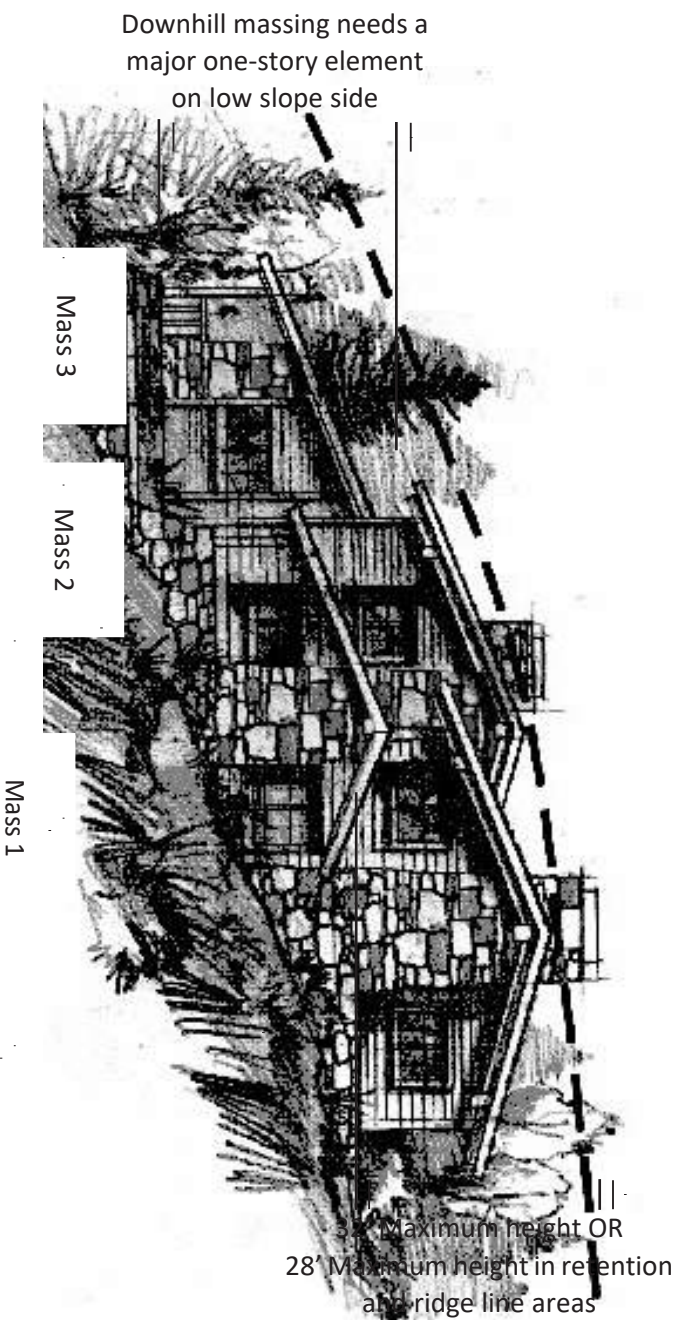
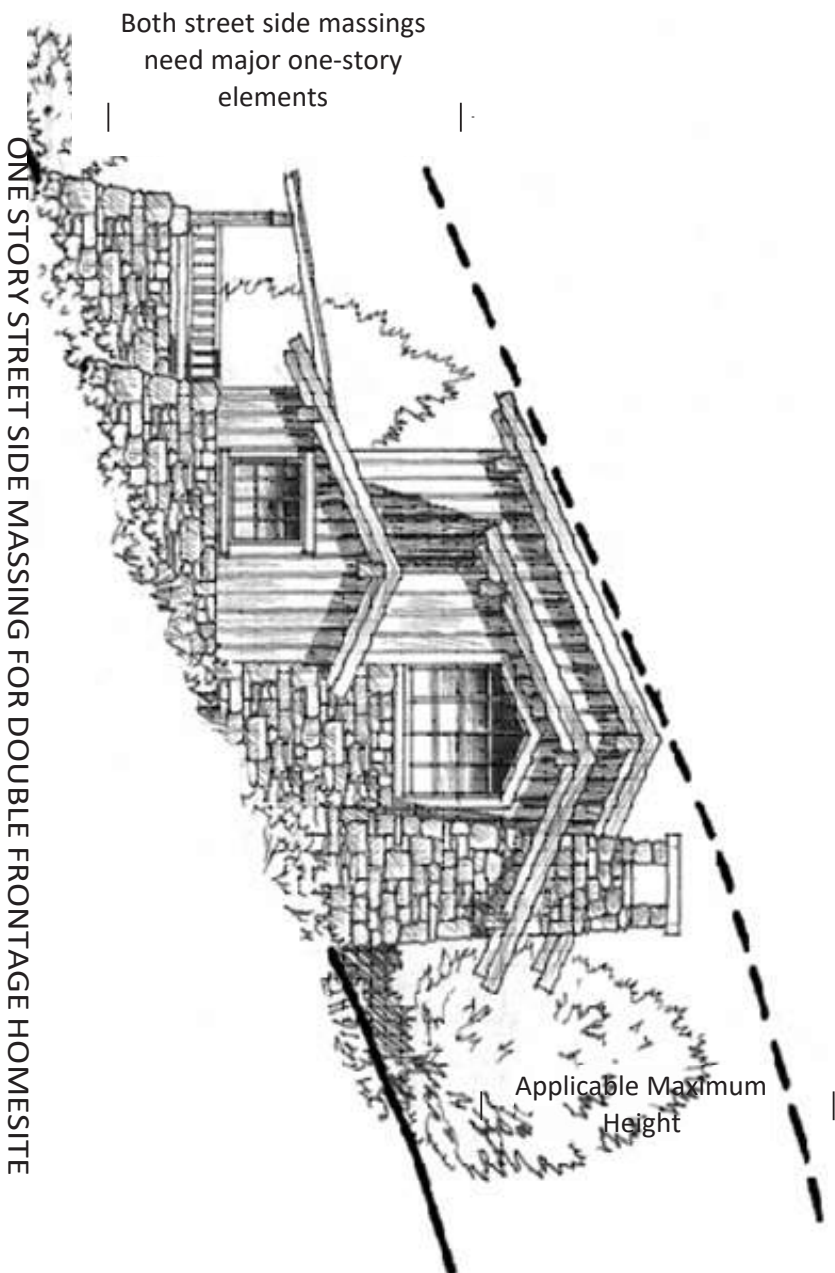
4.3 Height and Massing of Structures

Laguna's building height restrictions are set to comply with City of Herriman ordinances, the Development Agreement, the Governing Documents, and these Guidelines. These building height restrictions are not meant to protect any view from any lot. Their primary purpose is to create and maintain the overall development appearance of the Laguna Community.

Laguna homes cannot exceed a true vertical height of 32 feet, except in Retention or Ridgeline Areas where the maximum is 28 feet or whatever height may be achieved without breaking the ridgeline whichever is less. This maximum height limit is applied to the highest point on the structure, excepting chimney elements, when that point is measured from the original natural grade directly below it.

The Guidelines intend for roof forms on sloping Homesites to step down with the grade, so that these homes integrate with, rather than disrupt, the natural landscape. However, the Committee may allow some Homesites to exceed the height requirement if, for example, the average slope across the Homesite exceeds 15 percent, and if the part of the home that exceeds the maximum height is a limited, unobtrusive, ridge projection which sits at the downslope terminus. The Committee will make this allowance on a case-by-case basis after it has carefully considered factors such as the slope of the Homesite and the overall Homesite Design; however, all allowances such as this are subject to City of Herriman approval.

SLOPING AND SINGLE-STORY MASSING





Section 4.6 explains specific roof design criteria (i.e. pitch ratios, structural shapes, material types, venting requirements, etc.) for Laguna Homesites.

The primary purpose of the home height criteria at Laguna is to avoid the construction of homes that are too tall. Beyond these specific height limits, the Committee will evaluate every Homesite Design in relation to its location on the landscape, to neighboring Homesites, to surrounding roadways, to adjacent Common Area and Open Space views, etc. These height restrictions are not meant to impose generalized criteria where, in some cases, more specific consideration and insight might propose a more fitting solution for a home's actual design and functionality. The Committee specifically reserves the right to impose a height restriction less than that which is stated herein, if the Committee believes such restriction is necessary within the conditions of a specific Homesite or even a specific group of Homesites.

Offsets or indentations in wall planes create visual interest and add depth via shadow lines. Therefore, the following massing requirements are established to ensure that proper depth and visual variety exist on all Laguna Homesites. Massing requirements for Homesites at Laguna are the following:

1. Height Offset Requirement

- Homes at Laguna may never have a building wall which extends more than 20 feet in height without an offset of at least two (2) feet.

2. Length Offset Requirement

- Homes at Laguna may never have a single-story building wall extending more than 30 feet in length without an offset that extends for the full height of the one-story wall, of at least two (2) feet; and Laguna homes may never have a two-story building wall extending more than 20 feet in length without an offset that extends for the full height of the two-story wall of at least two (2) feet.

3. Massing Requirement

- Every home within Laguna must have a minimum of three (3) distinct masses which are differentiated both vertically and horizontally by a minimum of four (4) feet,

unless the home is specifically granted an exception by the Committee. In certain instances, the Committee, in its sole discretion, may require a Homesite Design to be comprised of more than three (3) masses. See proper massing example.

4. Separation Requirement

- Once a home exceeds 6,000 square feet of Gross Total Area or in other certain instances, the Committee, in its sole discretion, may require a Homesite Design to divide a portion of its masses by using a narrow corridor or a covered walkway (which walkway and/or corridor is at most eight (8) feet wide and one (1) story in height), a detached garage, or another type of properly permitted out-building.

5. Corner Homesite Single-Story Massing Requirement

- Homes on Laguna Homesites situated at the intersection of two (2) or more roads must have single-story elements adjacent to all of those streets on the home structure, unless such Homesite Design has been specifically pre-approved by the Committee to have otherwise.

44 Foundations

All unfaced visible surfaces of concrete masonry and/or concrete foundation walls and piers must be finished with mortar-wash and must be painted to blend unobtrusively with adjacent materials. The Committee, in its sole discretion, may consider the use of either exposed aggregate concrete or textured concrete block (with a pre-approved integral or applied color) rather than mortar-wash appliqué.

Foundation walls must always step down with the grade change, so that the wall's exposed surface never exceeds a vertical height of eight (8) inches above finished grade (when measured where the wall is most greatly exposed). Material which covers the foundation wall must always be in the same plane as the wall.

Where the vertical distance of any ground floor wood deck structures exceeds 30 inches above the finished grade below it (measured from the underside of the structure, along its perimeter edge),

the deck edge must be skirted with a stone wall, wood latticework, or wood siding which screens the cavity beneath the deck. Foundation walls that occur under a skirted deck (so that they are not visible at all) are exempt from the facing requirements stated in this section.



4.5 Exterior Wall Materials

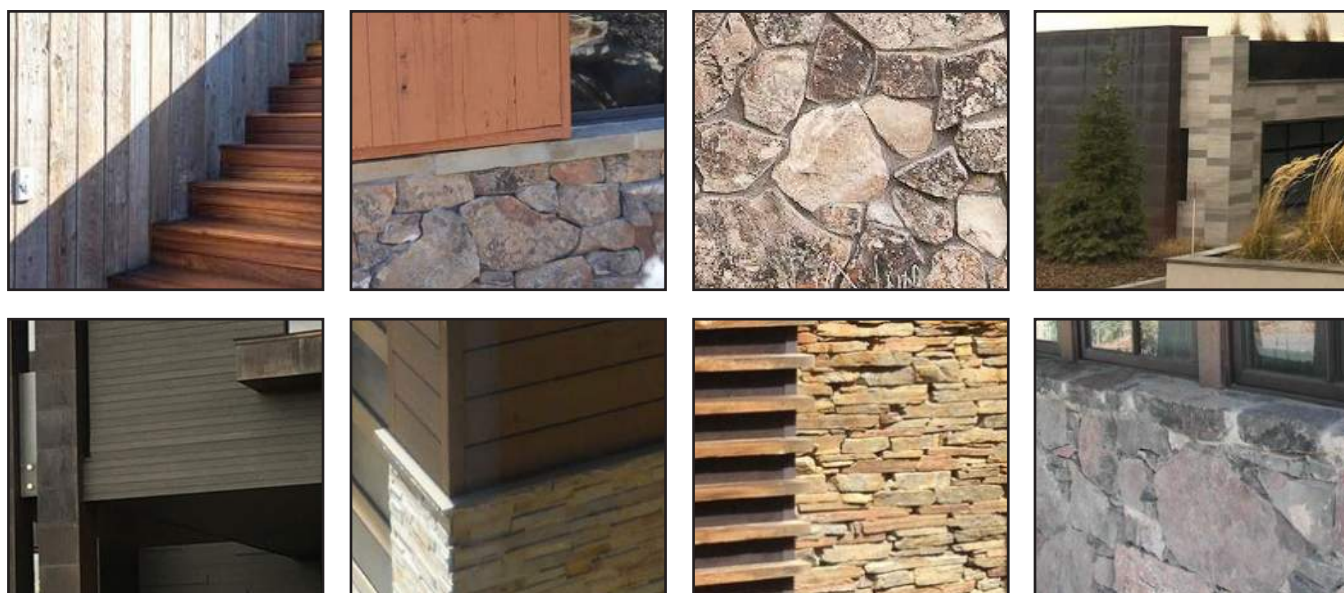
The Laguna Community encourages the use of many different materials that are consistent with and help appropriately broaden the emerging architectural grammar of Laguna. In keeping with the spirit of furthering the architectural grammar and staying true to the Elements of Composition, exterior materials used on every Homesite should generally be made of natural elements and shall be both compatible with, and complimentary to, the native landscape. Material selections must take into account the context of the individual lot as well as the adjacent lots so there is diversity in materials in the street scene. Our goal is not just to make sure a house is well designed, but also the neighborhood in total is well design. Each house makes up a piece of that overall composition.

Predominant exterior wall materials shall either be wood tongue-in-groove board siding, board-on-board, board and batten, horizontal wood lap siding, or free edged boards, native stone, concrete, specialty masonry concrete block, or steel panels, in addition to the glass for the windows. Logs may only be used on exterior walls if they are combined with an ample amount of one (1) of the materials listed above. The Committee will never approve any home which is completely made of logs.

Each home must include a significant amount of stone, concrete, or specialty concrete masonry, such as board formed concrete, on its exterior surface so that it conveys a sense of visual strength as one would expect a home in the mountains to have. The Committee, in its sole discretion, generally requires a minimum of 25 percent of the exterior wall surface of the home (excluding windows and door openings) to be made of stone, concrete or specialty masonry. As every Laguna HomesiteDesign will be uniquely tailored to its own Homesite conditions, architectural theme, etc., the Committee will make the final decision as to whether this required stone minimum is met on each

Homesite Design as such applicable Plans are appropriately submitted. The stone used may either be native or cultured (i.e. El Dorado); but regardless, the stone type must be evaluated and pre-approved by the Committee.

In its sole discretion, the Committee may consider and pre-approve an additional stone type, if an Owner and/or his/her Architect proposes such during the Design Review process.



Plywood siding is prohibited on Laguna homes unless an Owner or such Owner's Architect can sufficiently demonstrate to the Committee that the finished appearance of the proposed siding would be indistinguishable from an individual board siding application.

Stucco may never be a predominant exterior surface material, but it can be used as a secondary material should it be consistent with the design intent. In its sole discretion, the Committee may approve the use of a limited amount of stucco veneer. But these limited amounts shall only be used along with another approved exterior wall material, and the stucco shall never as a main exterior wall component.

All uniformly colored and textured surface finish, metal siding (excepting copper left to patina and Corten, cold or hot rolled steel), fiberglass siding, vinyl siding, and/or asbestos siding are prohibited as well. On a case-by-case basis, the Committee will consider and pre-approve certain high-quality composition siding products if the Committee decides such products would be virtually indistinguishable from their natural wood counterparts.

All proposed composition siding products must have a porous wood-grained surface which is suitable

for the application of traditional stains and/or paints and must have a Committee pre-approved color.

All exterior surfaces, including, but not limited to gutters, roof vents, and window frames must be properly finished or painted. Corten, hot and cold rolled steel wall surfaces left to rust and copper or zinc wall surfaces left to patina may be allowed but other unfinished metallic exterior wall surfaces must be reviewed with the Committee.

The Committee will consider proposals to use large scale brick or textured specialty masonry block as an exterior finish material on a case-by-case basis.;

To bring a broad range of exterior wall materials to Laguna the following images represent some of what is considered appropriate at Laguna. Other materials will certainly be considered should they be approved as appropriate to the context of the house.

46 Roofs, Trellises, and Awnings

The roofline of each Laguna home shall be responsive to the plan form in a creative way and should be evolved simultaneously as the plan form takes shape. Roofs should not be an afterthought once the plan has been created. They should also be responsive to the context of the home, and work in harmony with it, so they become integrated into the overall context of the neighborhood and of Laguna in general, and not be discordant. Roofs need to be designed to be effective for their use as sheltering the house from the elements of snow, rain, sun and wind, as such must be shown to do so as the home is reviewed.

The following architectural standards regarding roofs on Laguna Homesites should be followed as part of the Elements of Composition:

1. **Roof Lines and Massing:** At Laguna, asymmetrical roof designs are preferred over symmetrical roof structures, unless the design is such that it is considered appropriate to the Elements of Composition.
 - Under this intent, any long main roof lines need to be broken by lateral roof/massing elements. This ensures compliance with the Section 4.3 triple massing requirement (i.e. homes having at least three (3) distinct masses differentiated both vertically and horizontally by a minimum of four (4) feet), and it also prevents any linear awkwardness that could be present in typical roof designs. The Committee will carefully evaluate all roof ridge lengths in relation to the overall home design massing to achieve

compliance with this section, and in its sole discretion, may require roof lines to be broken or offset by further massing (in addition to the minimums required herein).

- At Laguna, the roofs of all two (or more) story homes shall include single-story elements. Higher masses in the roof design should generally occur toward the center, with the lower profiles occurring toward the outer portions of the home. At no time can the highest point of a home be at any of the outside walls. Roof Pitches: Residences at Laguna should generally be designed with pitched roofs due to the snow. Pitched roofs with the minimum pitch ratio allowed being five (5) feet in 12 (5:12) and the maximum pitch ratio allowed being 12 feet in 12 (12:12) with generally be the norm. At its discretion, the Committee may approve a certain roof design which contains a lower slope ratio, provided the design contains an appropriate mix of more steeply pitched roof compositions along with these low slopes. If the Committee, in its sole discretion, approves a roof with a pitch lower than 5:12, the roof must be entirely composed of copper, Corten, or zinc.

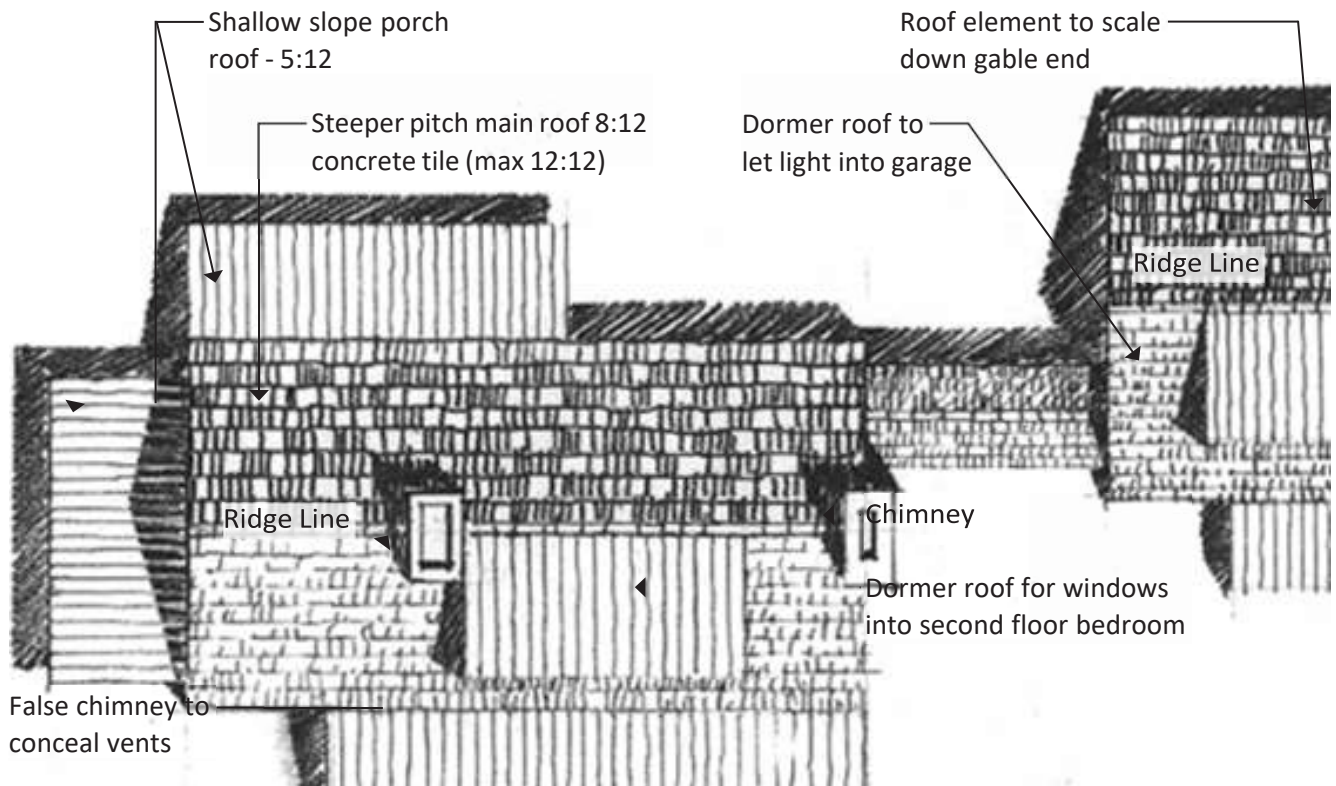
2. Flat Roofs: At its discretion, the Committee may approve flat roofs with very shallow pitches which are proposed for Laguna homes.

- Flat Roofs must be appropriate to the surrounding context of the lot. Flat roof designs should only be engineered with careful consideration regarding the heavy snowfalls that often occur in Laguna's mountain environment.
- The flat roof surface must be comprised of a living-green roof, pavers, and/or Corten or equal, copper or zinc—or a combination thereof. Green roof proposals must demonstrate that they will be appropriate to the landscape zone they are in at Laguna.
- Due to wind and sun conditions green roofs do not survive in several areas in Laguna, as such the landscape architect should confirm the likelihood of a health environment for the roof.
- Ballasted roof surfaces are generally not allowed on custom homes. The Committee, in its sole discretion, may approve specific types and/or mixtures of dark colored ballasted rock for all or for a portion of flat roof custom home designs on a case by case basis.

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3. **Prohibited Roof Forms:** At Laguna, mansard roofs, dome shapes, and/or other roof forms that do not properly resolve themselves are strictly prohibited.
 4. **Encouraged Roof Forms:** The Committee strongly encourages the use of gables, hips, shed roofs, and the use of dormers or clerestories that are appropriate to the main roof form to create roof forms appropriate to Laguna homes.
 - Roof overhangs shall be found on all roof edges of Laguna homes, and shall extend on all sides for a minimum length of three (3) feet for roof slopes ranging from a 5:12 to a 12:12 pitch and four (4) feet for roof slopes which are less than 5:12.
 - In its sole discretion, the Committee may approve the absence of overhangs on certain roof designs, if the Committee deems such is appropriate to the architecture and design of the home.
 - Covered terraces and/or covered porches are strongly encouraged at Laguna as well, and such terraces and porches must always be fully integrated into the architecture and design of the home structure.

The following images illustrate a variety of desired roof forms.



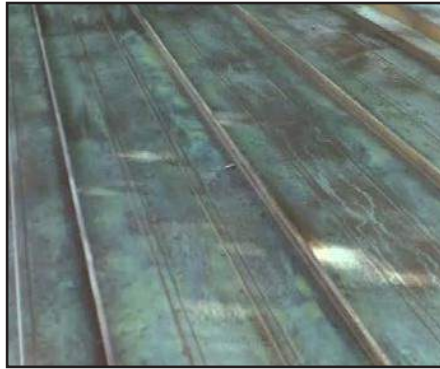


ACCEPTABLE ROOF DESIGN

Every Homesite Design submitted to the Committee must include a detailed roof penetration plan, which depicts all roof penetrations, including plumbing and mechanical vents, as well as all chimneys. The plan should show all the small plumbing vents grouped together in small chimneys as much as possible. As well, the plan should show how the large mechanical vent will be concealed in a false stone chimney. This roof penetration plan must be submitted and reviewed by the Committee prior to Final Approval.

Laguna mandates compliance with the carefully contemplated standards regarding roofing materials. Owners shall be responsible for submitting proper proof of compliance with the following standards as part of the Design Review process:

1. **Permitted Roofing Materials:** Roof materials which are permitted at Laguna include the following: weathered Corten steel (i.e. rusting steel), copper (which can naturally turn brown or patina), zinc (which is allowed to naturally patina), architectural grade fiberglass/composite shingles, slate, concrete shake tiles, textured concrete flat tiles, and certain other low reflectivity tiles



2. **Prohibited Roofing Materials:** The following roof materials are prohibited at Laguna: asphalt shingles with a standard or medium thickness, all types of barrel or “S” tiles, all asphalt roll roofing, and any permanent shiny copper or other blatantly reflective metal surfaces. As well, wooden shake shingles and/or other flammable roofing materials are prohibited at Laguna, due to Fire Department regulations. Thus, pre-finished metal roofs will be too reflective and will be prohibited unless the Committee specifically evaluates and pre-approves them.
3. **Material Specifications:** All architectural grade fiberglass shingles must be heavy-weight (i.e. they must have a minimum weight of 355 pounds per square), three-dimensional,

thick-butt asphalt shingles. The shingles must be placed so they are randomly staggered, so they portray a wood shake look, and so they have plenty of depth to create shadow. If such architectural grade fiberglass shingles are used as a roofing material, the Committee will require the roof to also have a significant amount of copper left to patina or Corten steel to accentuate and sophisticate the roof design and structure. The actual amount of copper, zinc or Corten steel accenting which is required on a particular roof will be decided by the Committee on a case-by-case basis; but generally speaking, the Committee will require a 25 percent minimum of such accenting to occur on roofs at Laguna. In addition, an edge cap detail, as approved by the Committee, must be used to properly finish the edge appearance.

4. **Trellises** are encouraged as a way to extend the roof form over entries and terraces and give sun protection. They must be detailed in a way to assure the committee of their longevity as trellises detailed with too small of framing members tend to twist and turn over time.
5. **Awnings** are prohibited in all cases.

4.7 Entrances

Entrances on Laguna homes should be designed in a human scale proportion, rather than having exaggerated dimensions. Thus, no entry may exceed a single-story height. Appropriate grandeur should certainly be experienced after entering Laguna homes, but not extravagantly worn on their exterior façade. At Laguna, clean lines on restrained and understated entries are much more appropriate than entryways which are too ornate, monumental, or imposing (which entries the Committee will not approve).

Trellised entries can be used as a pleasing and welcoming transition area between indoor and outdoor space. Laguna prefers and encourages home entrances that are part of a covered front terrace or porch.

Since there is typically only one (1) driveway entrance per Homesite, porte-cocheres will only be approved on Homesites which are large enough to have these structures and to still allow for the required turning movements set out in Section 3.4 without encroaching into any side setbacks.

4.8 Porches, Terraces, and Decks

Laguna strongly encourages using a covered front porch or front-facing terrace as a core structure on every home. This feature helps “relax” the street side of the home and makes it feel less like a home one finds in a more urban area. If it is properly designed, a front terrace can be both an architectural asset and an augmenting element which encourages the traditional, more private use of the backyard.

The historically-based front porch/landscaped terrace concept will enhance Laguna homes in the following four (4) distinct ways:

1. The focal point of the home (as viewed from the streetscape) will become the people-oriented entrance, rather than the typical garage-dominated design being seen on the front side of the home.
2. The home’s entryway will become an architectural asset without being monumental or intrusive.
3. A sitting area with the benefits of a low wall and an overhanging roof can automatically be created on the home’s front exterior. This front porch or terrace can easily become an ideal area for enjoying the exceptional view of the landscape that is so often only visible from the front of the Homesite.
4. The home’s living area immediately feels more spacious as this terrace or porch creates an easy indoor/outdoor transition which opens naturally toward the front yard and streetscape.

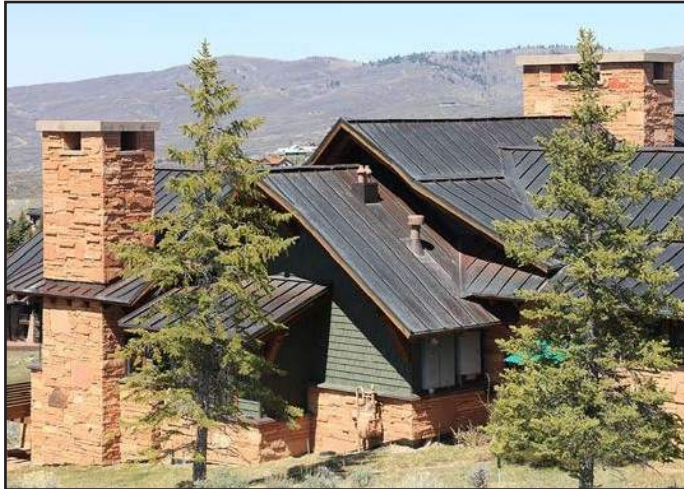


4.9 Chimneys

Well-proportioned chimney masses can and should be used as sculptural features which complement the architectural quality of every home at Laguna.

Unique chimney designs are encouraged at Laguna, as chimney structures can lend themselves to having a variety of angular and rounded forms. The Committee encourages Laguna homes to have carefully contemplated chimney structures which greatly enliven the three-dimensional quality and the architectural profile of the overall Homesite Design.

To preserve the high quality of the mountain air at Laguna, all Owners are encouraged to utilize natural gas or propane log fireplaces in their homes, rather than using standard wood burning fireplaces and/or stoves.



Due to the extreme fire danger usually present in this high desert and mountain region, all chimneys, including outdoor fireplaces, must be equipped with a U.L.-approved or an I.C.B.O.-approved spark arrestor. All metal spark arrestors must be completely concealed from view and buffered by a sufficient chimney cap screening (i.e. black mesh, etc.) and detail. Exposed metal flue pipes will not be approved by the Committee.

4.10 Outdoor Fireplaces and Fire Pits

All open outdoor fireplaces and fire pits are prohibited at Laguna unless they use natural gas or propane. Portable barbecues will only be permitted if they have lidded cookers. All permanently installed barbecues must be pre-approved by the Committee.



4.11 Exterior Colors

Preserving the appearance of the natural landscape is a primary goal in the Laguna Community and maintaining this focus will always play a critical part in the approval of exterior colors for Laguna Homesites. Therefore, on homes at Laguna, the colors of the exterior materials must be subdued enough to blend in with the natural landscape and they must compliment the surrounding nativity, rather than disturb it. The Committee highly recommends using earth tones on homes' exterior surfaces; however, the Committee, in its sole discretion, may approve the use of other accenting colors (if the colors are consistent with the Homesite Design, and if such colors are used judiciously and with restraint). The composition of color for the community is very important in considering the Elements of Composition. In selecting color, it is not only important to look at colors pleasing to the homeowner's desire, but also to look at the overall context of the setting of the Homesite. We are not trying to promote a community that is too brown or too dark, but one that in context of the full community composition is interesting and naturally colorful.

Colors which approach the primary range (blue, white, and yellow) are prohibited at Laguna, and colors that have drastic light-to-dark contrasts in value and hue are prohibited as well. In certain cases, the Committee may approve white as an accent or "trim" color; however, "light-grey" siding stains which approach white or off-white in their appearance are prohibited. Garage doors and/or exterior doors are not considered "trim."

All exterior colors must be proposed to the Committee in a sample format which sufficiently depicts the actual hue, tone, and shade of the proposed color in its final application. The Committee requires any color selection which is part of a Homesite Design to be applied to a sunny area of the home prior to Final Approval.

As the Committee will only approve exterior colors which match and compliment the natural coloration of the summer and winter landscapes at Laguna, Owners, Architects, and Builders are encouraged to consult the Committee when formulating color proposals and when seeking appropriate examples of exterior colors. Most importantly, in every Laguna color proposal submitted, all colors must fall within a Light Reflectance Range (LRV) of 15 to 35.

4.12 Windows, Skylights, Draperies, and Shutters

Windows on Laguna homes should have proper architectural detailing and have an overall composition that is orderly. Windows should not appear as openings which are randomly cut into the elevation; but rather, all windows should be carefully designed so that they add depth and detail by being appropriately recessed, projected, or bordered by projections that provide a shadow pattern and reduce reflectivity. The Committee encourages consideration of the use of divided light detailing to properly scale a window. More contemporary designs will still want to consider divided light detailing to break up large unbroken panes of glass.



While elevations may differ on various sides of a Homesite, windows on every side of the home must be treated with equal attention to detail (i.e. the same attention given to the front/street side as is given to the rear side). All facades on a home shall have a sufficient degree (which required degree

will be determined by the Committee, in its sole discretion, on an individual basis, depending on the particular Homesite Design and home size) of doors, windows, or other wall openings. Windows that are either insensitively placed and/or poorly designed will not be approved by the Committee. Window heads shall either be designed so they follow roof lines or so they remain level. The Committee shall not approve scissor truss windows with slopes which do not match the roofline of the home.

All skylights shall be positioned on the roof in an organized pattern which aesthetically compliments the roof design, rather than being placed arbitrarily. All skylights shall be flatly shaped and shall have a low profile. Bubble-type skylights, or circular tube type skylights are prohibited at Laguna.

Window panes and/or skylight lenses shall not be highly reflective. Skylight lenses must be clear, grey, or bronze in color. No white skylight lenses or window panes are allowed at Laguna, and window or skylight frames which are made of reflective material which is left unfinished is strictly prohibited. This restriction especially applies to aluminum frames which must be anodized or finished with baked enamel.

All shutters and/or drapery linings which may be visible from outside of the home must be neutrally or earth-tone colored. The Committee prefers that shutters/drapery linings be either black or other earth tones, as is required on exterior wall surfaces of Laguna homes. If a light color is preferred, earth tones (i.e. those marketed as beige, taupe, cream, ivory, etc.) should be used. The Committee will consider the shade of tinting and glazing in windows combined with the drapery colors when reviewing and evaluating proposals. Colors marketed as “white,” which is defined as the absence of color, will never be approved by the Committee unless they are obscured by tinted glass which the Committee determines, in its sole discretion, is dark enough to eliminate unwanted contrast/reflectivity and make the shutters/ drapery linings appear colored. Pre-approval by the Architectural Review Committee is required for any shutter/drapery addition to a Laguna home.

4.13 Building Projections

On Laguna Homesites, all projections from homes or other Homesite structures including, but not limited to vents, flashing, louvers, gutters, downspouts, utility boxes, porches, railings, and exterior stairways shall either identically match the color of the surface from which they project, or they shall be painted/stained with color(s) which are pre-approved by the Committee, so that such projections unobtrusively blend in with adjacent surfaces.



Most importantly, as stated in Section 3.1, all building projections shall be contained within the building envelope.

4.14 Garages and Garage Doors

Every Laguna home shall have a garage (which can be either attached or detached) which accommodates at least two (2) automobiles. Carports are strictly prohibited at Laguna. Garages and/or garage doors shall not visually dominate the exterior elevations of the residence as viewed from the streetscape, neighboring Homesites, Common Areas, and/or Open Spaces. The Committee will not approve any Homesite Design submittal which depicts the garage/garage door(s) as a visual focal point in any way.

As Laguna makes it a priority to avoid becoming a typical residential community which has streets aligned with rows of unattractive garage doors and oversized driveways, the Committee requires that all Homesite Designs genuinely strive to minimize the visual dominance of garage doors. The Committee will not approve proposed Homesite Designs which do not take effective measures toward this garage minimization goal. Owners shall be responsible for seeing that their particular Homesite Design(s) take measures toward garage mitigation, which measures include but are not limited to the following:

1. Side garage entries (which are out of direct streetscape view)

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2. Garage door overhangs and/or piers that serve to recess the doors by providing an extra softness of shade and shadow
 3. Significant architectural detailing (i.e. wood carriage doors or another carefully articulated design, rather than a simple horizontal line design) on the garage doors to add visual appeal and to mitigate the feeling of a dominating garage.

To most effectively eliminate the potential view of garage doors from the street, the Committee requires one (1) of the following on Laguna Homesite Designs:

1. The garage is a separate structure from the home
2. The garage is made part of a separate structural mass (with or without an enclosed connection to the main part of the home)
3. The garage entrance is completely out of street view.

If topography or other Homesite constraints make all the above options impossible, then the Committee may pre-approve alternatives to one of the above options, so long as the home portion (rather than the garage) remains as the visually dominant image on the Homesite. For instance, the Committee might approve garage doors which partially face the street if they are placed at a minimum 45-degree angle from the street right-of-way. All Homesite Designs proposing exceptions to typical garage requirements will be evaluated and pre-approved on a case-by-case basis by the Committee, in its sole discretion.

From a design perspective, garage doors must coordinate with and compliment the rest of the home's motif and architectural elements. Garages may never present closed or unarticulated facades. Garage door glazing should serve to minimize the garage doors' appearance. As well, the Committee will not approve large or unbroken masses or structures above garage doors; instead, the Committee expects to see sufficient detailing and/or a change in surface plane to sophisticate the design in the area above the garage doors.

Garage doors shall be either the same color as the main body of the home, or they should be a slightly darker shade of the same color. Regardless, garage doors should never have a hue that is so light or so dark that it causes the garage to draw extra and/or unnecessary attention. As well, the Committee may not approve the use of fluorescent or other highly visible lighting inside a garage if, in its sole discretion, the Committee decides that the light seen from the open garage door(s) and/or

garage door windows would cause an excessive glare to views from neighboring Homesites, roadways, Common Areas, or Open Spaces.



The Committee encourages garages at Laguna to have single-bay doors, rather than double-width doors, to create a smaller-scale garage appearance as it is compared to the rest of the home structure. In its sole discretion, the Committee may approve double-width garage doors if the Owner and/or Architect can sufficiently demonstrate that the size of a double-width garage door structure is proportionally minimal when it is scaled against the rest of the Homesite Design and against the surrounding neighborhood streetscape. At Laguna, single garage doors divided by a substantial column or pier are always encouraged over double-width garage doors.

Regarding garage door placement, when a Homesite Design contemplates three (3) or more garage bays, the Committee specifically requires proof that no more than two (2) doors be in the same plane. The third (and fourth) door(s) must occur in a secondary building plane, offset by a minimum length of 32 inches from the primary front wall of the garage, to avoid a continuous uninterrupted wall of three (3) or more garage doors.

Finally, garage doors may never exceed a maximum height of nine (9) feet. As well, all garage doors must be recessed at least one (1) foot from the face of the closest exterior wall surface.

4.15 Solar Applications and Structures

At Laguna, passive and active solar designs are encouraged. The Committee will only approve solar applications if the Owner demonstrates that the solar hardware is consistent with the home's architectural design, which generally will require an edge to edge design concept, or some other well thought out concept for integrating them into the roof design. Retro-fitting an application of solar panels into an existing roof and/or home design after initial construction is both difficult and rarely successful from a design standpoint. If an Owner anticipates using solar panels, they should be incorporated into the Preliminary Submittal for the Homesite Design, so the Committee can properly review and approve the panels and how they are integrated into the design. While the Committee remains receptive to developing technology pertaining to home materials (i.e. solar shingles and wall

glass), solar panel arrays will not be approved on the ground plane of a home design. Below are examples of solar panels incorporated into a home:



The following images portray solar systems that won't be allowed based on various factors including but not limited to stair stepping panels, ground panels, and scattered roof panels.



4.16 Dog House and Flag Poles

All dog houses, dog runs, flag poles, and other permanently installed recreational equipment must be integrated into the Homesite Design and must be submitted to and pre-approved by the Committee before its construction.

4.17 Changes, Alterations, or Additions

All changes and/or additions to the Committee-approved Plans which occur before, during, and/or after Homesite construction must always be submitted to and approved by the Committee prior to their construction. In general, all changes, alterations and additions must be compatible with the original design. Similar materials and details must be used the changes, alteration and additions are seamlessly blended with the original construction.

4.18 Low Flow Toilets

All Laguna homes must use low flow toilets in their design. Low flow is defined as having a maximum of 1.5 gallons per flush.

4.19 Protection Systems

All Laguna homes shall be equipped with alarm systems to monitor fires and to monitor gas leaks. These alarm systems must be monitored and maintained by a reputable service.

4.20 Exterior Furnishings and Sound Systems

All outdoor furniture and/or sound systems must conform to the same color and reflectivity standards established in these Guidelines for a home's exterior colors (See Section 4.10). Any exterior audio speakers must be an integral part of the home and must be concealed (with proper recession or buffering, as approved by the Committee, in its sole discretion) from the views of surrounding Homesites, Open Spaces, roadways, and Common Areas. Outdoor speaker music must never be so loud as to disturb occupants of neighboring residences.





5 - LANDSCAPE GUIDELINES

As homes are designed and built within Laguna, care must be taken to preserve the rugged natural beauty that is so intrinsic to the Community's character. Laguna's native vegetation and unique Homesite features will always remain the fabric that weaves together a cohesive, yet very distinct Community.

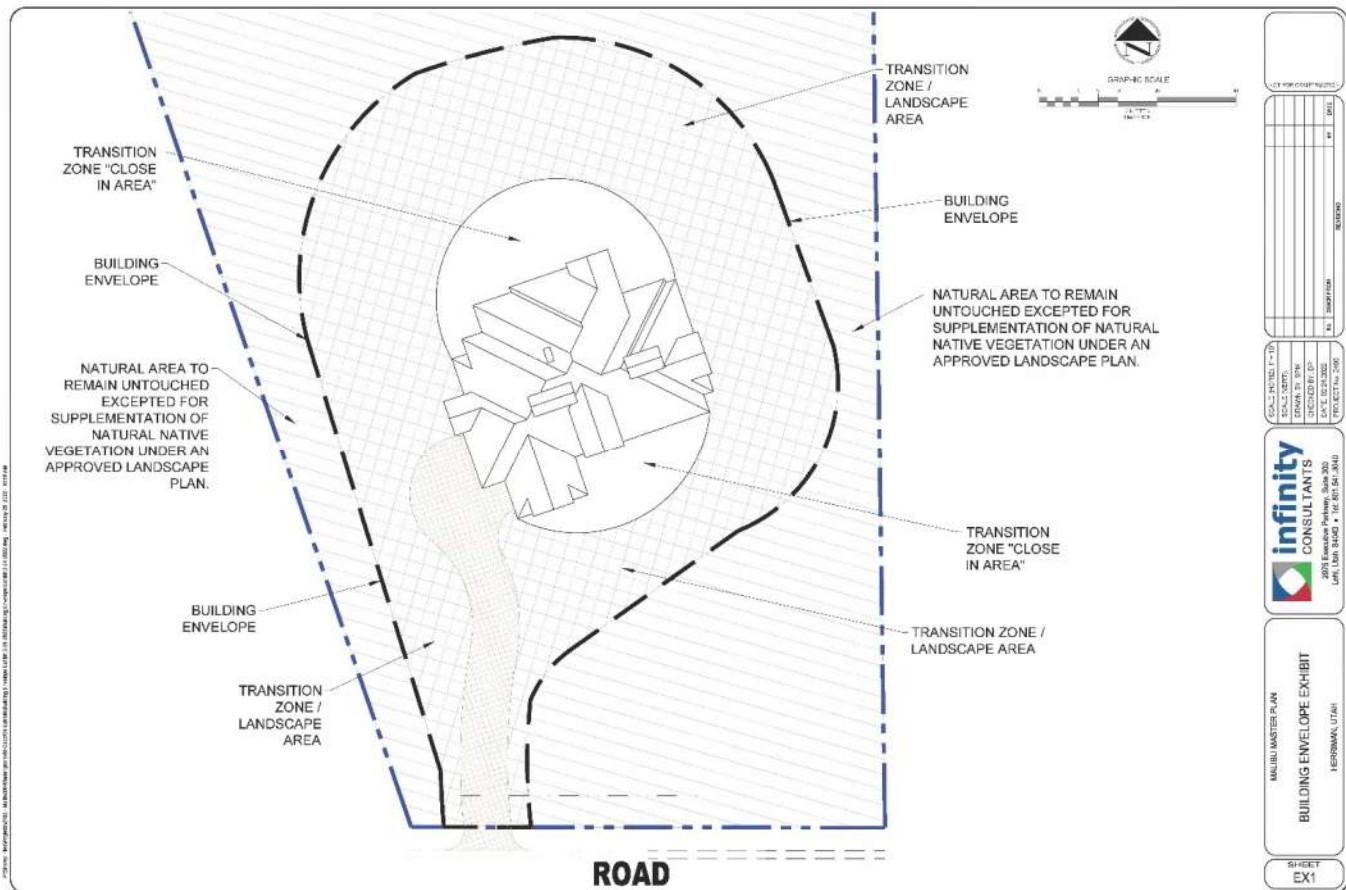
Decisions about placement of the home and any outdoor areas (i.e. patios, etc.) must be sensitive to both the preservation and the continuation of the existing natural environment on the Homesite. Thus, all trees, natural vegetation, and any other Homesite features should help to enhance the overall appearance of the Homesite. Since the plant species that are permitted for revegetation are limited, and since the growth process is long; every method that can somehow preserve existing vegetation must be employed.

All landscaping desires should be carefully considered during the site planning phase of the Homesite Design. Retrofitting a home with what seems like appropriate landscaping after the design has already been created will not likely result in a solution that is fitting for Laguna, nor one that meets the Committee's requirements.

To help enhance the natural beauty of the Homesite(s), it is key to provide a plant palette that blends with the surrounding area and using vegetation from the Approved Plant List (Section 3.17).

Each Homesite has a designated building envelope, which is specifically designed to protect and to preserve the natural features of the landscape. When thinking about the site plan and the landscape design, three (3) zones comprise each Homesite:

1. Natural Area
2. Transition Area
3. Private Area



5.1 Natural Area

The Natural Area is that portion of the Homesite which lies outside of the building envelope and which must remain as a natural area left untouched and undisturbed during construction. On Homesites which already have existing disturbance within the Natural Area, revegetation will be required; and it shall be the Owner's sole responsibility to install this revegetation and to preserve it as such. In other cases, the Landscape Master Plan (Development Agreement; Exhibit J) may require enhanced landscaping within a Homesite's Natural Area for different reasons; and again, it becomes the Owner's sole responsibility to install this revegetation and to preserve it. Thus, the Landscape Master Plan, requires revegetation on certain Lots within Laguna. And in still other cases, the Committee may simply permit this enhanced revegetation on a Homesite at the Owner's discretion.

If revegetation is required or otherwise permitted on a Homesite, the only plants that may be used are those which are indigenous to the general area of development in which the Homesite is located. As well, all Natural Area revegetation (i.e. all added plant material) must have both a density and a mix that match the density and mix of the general area of development as closely as possible.

On Homesites with existing vegetation, permanent irrigation of the Natural Area is not permitted

because indigenous vegetation does not normally require additional water. Permanent irrigation of the Natural Area could lead to disease and death of the native plants, and it could even promote the spreading of undesirable plant species or weeds. However, temporary irrigation of all revegetation (whether it is required or permitted) is allowed.

In an effort to create a more natural and cohesive landscape / streetscape, the Committee may, at its sole discretion, approve additional trees in the natural areas.

5.2 Transition Area

The Transition Area is the portion of a Homesite that is within the building envelope but is still outside the residence or Homesite walls. In the Transition Area, the Owner may enhance the landscape. All areas of Homesites which are disturbed by construction activity must be restored and revegetated; and they must be appropriately tended until the natural vegetation is reestablished and sufficiently nourished. Additional landscaping may also be required in the Transition Area by the Landscape Master Plan.

For Lot-specific requirements about Landscape Master Plan requirements see Section 5.4.

For Owners either wishing to or required to undertake supplementary planting, the Laguna landscaping concept should be envisioned as a series of concentric planting zones around a home. The most formal planting must be situated adjacent to the residence, or as an accent border within six (6) feet of either side of the entry drive or the parking apron. Plant materials in this “Close-In Zone” may be selected from the Approved Plant List described in Section 3.17. As the distance from the home increases, a transitional planting zone may occur between the formalized planting around the residence and the established building envelope. Planting in this transitional zone should be selected from the Approved Plant List in Section 3.17. The landscape shall blend back to the natural vegetation outside the building envelope referred to as the Natural Area. The line of interface between this transitional zone and the natural landscape outside the building envelope may occur along a soft-edged, irregular line which roughly approximates the building envelope line.

Most importantly, special care must be taken during the initial planning for placement of the home on the Homesite, so that sufficient planting space is allowed for any perimeter landscaping (whether it is required by the Committee or simply desired by the Owner) to occur without encroaching outside the building envelope in any area on the Homesite.

At the least, every Homesite’s landscape plan must meet the requirements of the Landscape Master Plan (as referred to in Section 5.4) for various Lot types. The Committee must review and approve the

required Homesite landscape plan (such requirement is explained in the Design Review Procedures and Architectural Review Committee Organization), as well as any and all supplemental landscape plans, prior to Final Approval and prior to any landscaping implementation on the Homesite.

53 Private Area

The Private Area is the part of the building envelope which is screened from view from adjacent Homesites, the streetscape, Open Spaces, and any Common Areas, either by site walls or another structure(s). It is within this Private Area that an Owner may create as varied a landscape as he/she desires, provided that only plants from the Approved Plant List (Section 3.17) are implemented. The Owner may only choose plants other than those from the Approved Plant List if the Committee pre-approves them. Drip irrigation systems are allowed within the Private Area. All Private Area landscape designs must be properly submitted to and pre-approved by the Committee before any landscape is implemented.

54 Landscape Master Plan Requirements

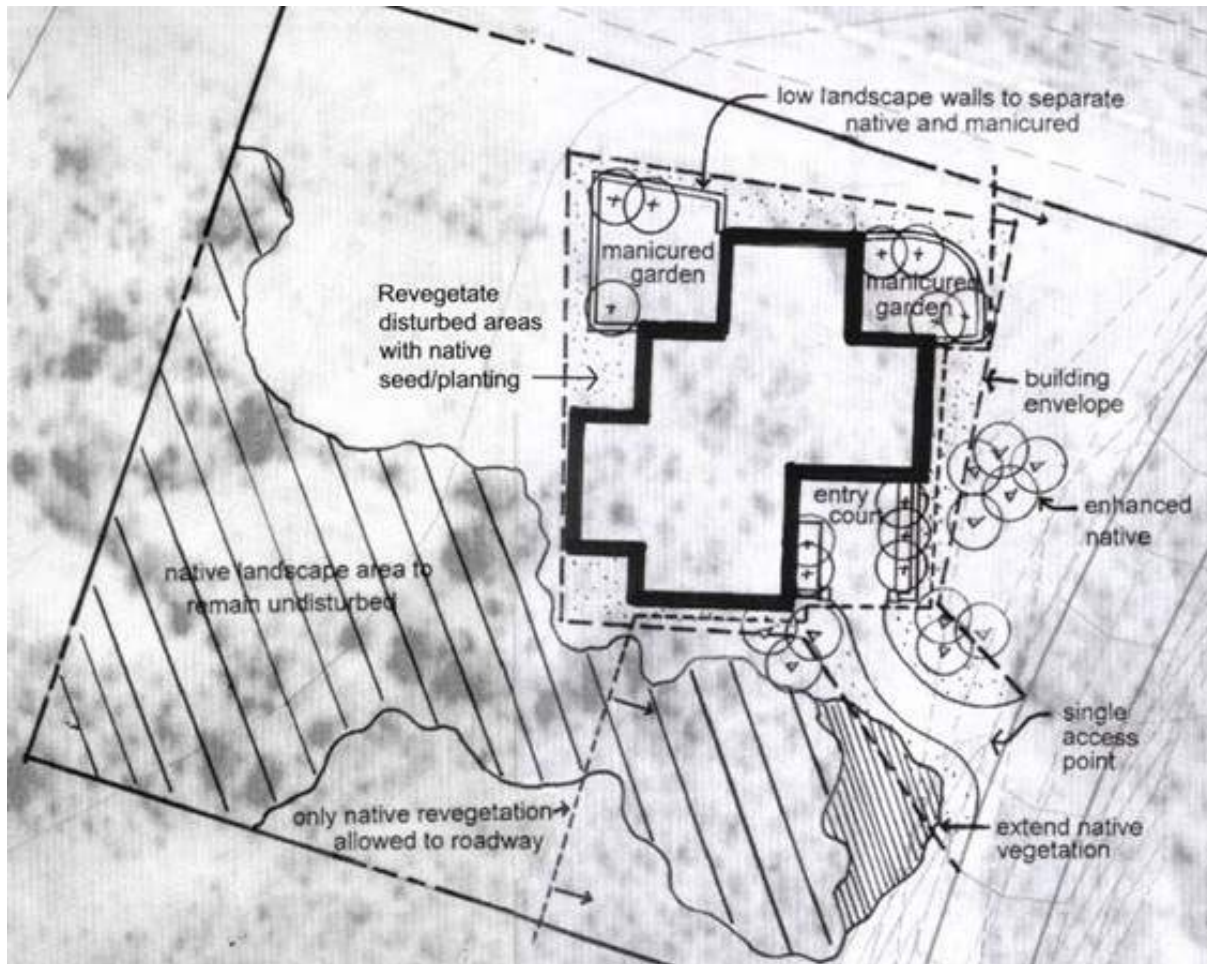
Typical lot planting requirements for Laguna Homesites include, but are not limited to the following:

1. **Building Improvements:** Except for the required planting and/or irrigation of enhanced native vegetation, any and all improvements and/or disturbances made to the Site must be within the designated building envelope.
2. **Disturbance Area:** Regardless of the building envelope size on a Homesite, no more than 65 percent of the Homesite's total area may be disturbed.
3. **Vegetation Types:** On any and all Homesites, only native vegetation shall exist in the area which is situated between the access road and the designated front building line boundary. All disturbed areas on a Homesite shall be revegetated by using native grass, wildflowers, and sod seed mix.
4. **Garden Areas:**
 - o Manicured garden(s) (which gardens consist of sod, trees, and irrigation) are optional on Laguna Homesites.

- o Such gardens may include the quantity of plants the Homesite Owner desires; however, such gardens may only have a maximum total area of 4,000 square feet.
- o Any and all improvements in such gardens shall be contained within low landscaping walls, which are an architectural and visual extension of the particular home's building structure.
- o Manicured garden spaces should thematically and aesthetically relate to and compliment the home structure's interior spaces.

5. Enhanced Native Vegetation Requirements:

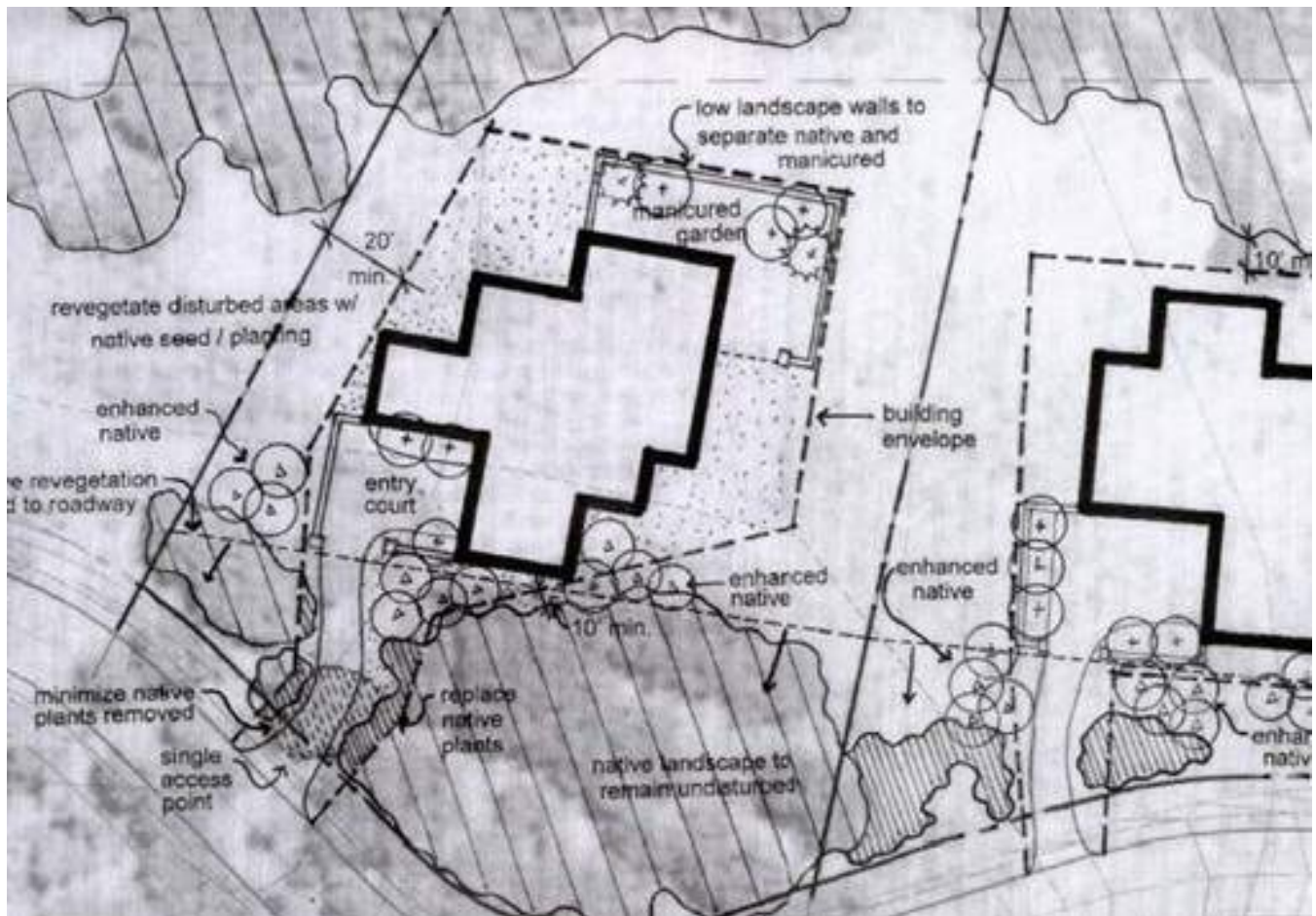
- o The required enhanced native vegetation on a Homesite is separate from and situated outside of the manicured garden space, and such vegetation should effectively blend with and compliment the structural architecture on the Homesite.
- o The required enhanced native vegetation may occur outside of a Homesite's building envelope. Such vegetation should include plant massing and plant types which are similar to and compliment the enhanced vegetation on all neighboring Sites. The Committee may, in some cases, require that a Homesite's enhanced vegetation actually match and connect to such vegetation on neighboring Homesite(s).
- o All Homesites are required to install and maintain a proper drip irrigation system to serve the Site's enhanced native vegetation.
- o Enhanced vegetation on Homesites shall comply with the following size requirements: Deciduous: at least a three (3) inch caliper, and Evergreen: a height of 14 to 16 feet.
- o While a minimum height and caliper are required, it is important to vary the height and mass of the trees and shrubs to create a more natural effect.



TYPICAL LOT PLANTING REQUIREMENTS - LOT TYPE 1

1. Required enhanced native vegetation, which is outside of the manicured garden area:
2. Required drip irrigation.
3. Minimum total quantity of 16 trees of which a minimum of 8 trees must be evergreen.
4. No fewer than 5 of each tree type.
5. Trees clustered in groups consisting of at least 3 trees each.
6. Aspen trees cannot be used as a specimen tree or planted sporadically.

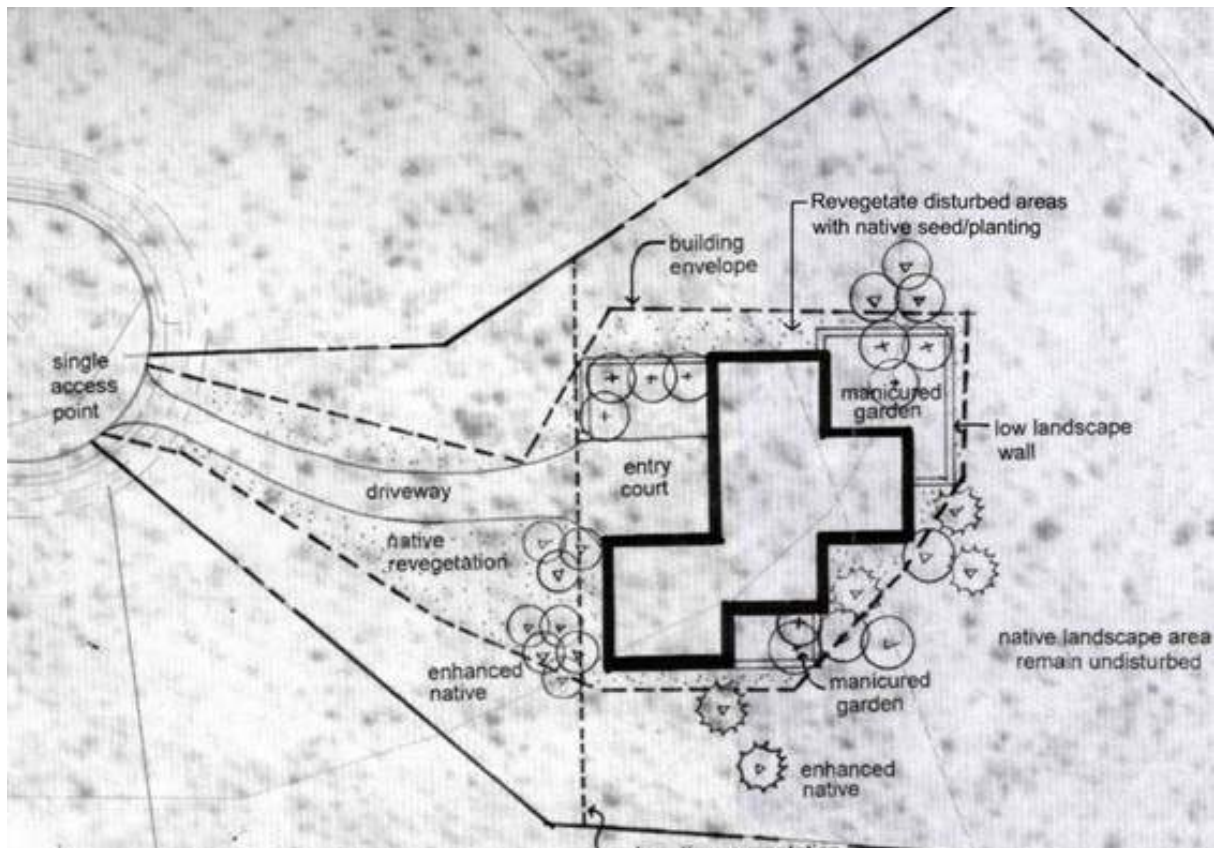
LOT TYPE 1 VILLAGE: Pod #



TYPICAL LOT PLANTING REQUIREMENTS - LOT TYPE 2

1. Required enhanced native vegetation, which is outside of the manicured garden area:
2. Required drip irrigation.
3. Minimum total quantity of 16 trees of which a minimum of 8 trees must be evergreen.
4. No fewer than 5 of each tree type.
5. Trees clustered in groups consisting of at least 3 trees each.
6. Aspen trees cannot be used as a specimen tree or planted sporadically.

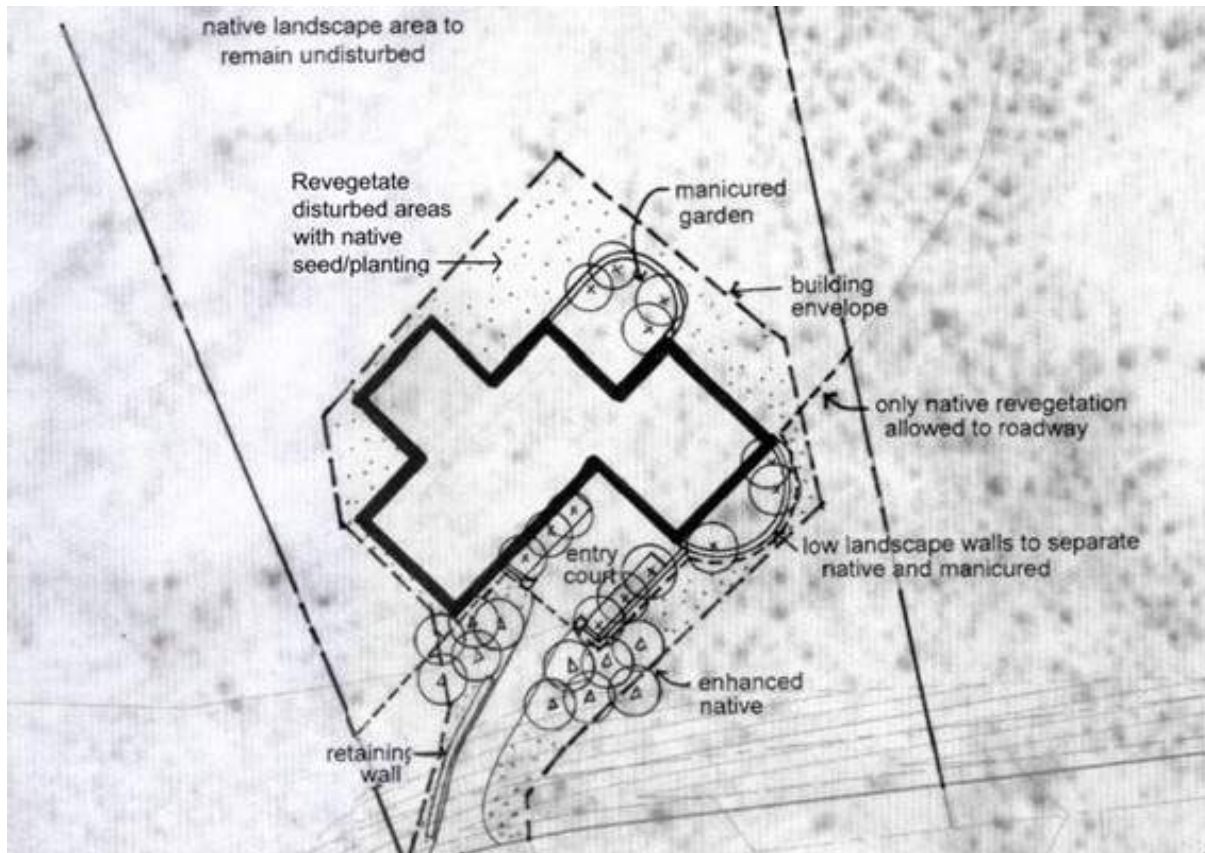
LOT TYPE 2 VILLAGE: Pod



TYPICAL LOT PLANTING REQUIREMENTS - LOT TYPE 3

1. Required enhanced native vegetation, which is outside of the manicured garden area:
2. Required drip irrigation.
3. Minimum total quantity of 24 trees of which a minimum of 12 trees must be evergreen.
4. No fewer than 5 of each tree type.
5. Trees clustered in groups consisting of at least 3 trees each.
6. Aspen trees cannot be used as a specimen tree or planted sporadically.

LOT TYPE 3 VILLAGES: Pod



TYPICAL LOT PLANTING REQUIREMENTS - LOT TYPE 4

1. Required enhanced native vegetation, which is outside of the manicured garden area:
2. Required drip irrigation.
3. Minimum total quantity of 16 trees of which a minimum of 8 trees must be evergreen.
4. No fewer than 5 of each tree type.
5. Trees clustered in groups consisting of at least 3 trees each.
6. Aspen trees cannot be used as a specimen tree or planted sporadically.

LOT TYPE 4 VILLAGES: Pod

55 **Diverse Homesites**

Within Laguna, each Homesite has specific and unique native landscape characteristics. Thus, it becomes extremely important for Owners, Architects, and Builders alike to consider specific Homesite features (i.e. vegetation type(s) and density, topography, surface material, etc.) before designing and/or constructing any landscaping and/or Homesite improvements. Laguna encourages each Lot to have very carefully crafted Homesite Designs (including all landscaping and building designs for the Homesite), which only contemplate improvements that preserve the Lot's native vegetation and complement its existing landscape.

During the Pre-Design phase of Design Review, the Committee requires every Owner to complete an "existing conditions" survey, which accurately provides locations and descriptions of all existing trees, plants, topography, ground planes, and elevations on the unimproved Homesite. This survey will provide a reliable basis for creating a feasible landscaping improvements plan; and as the Design Review process ensues, this initial survey information will ensure that the Committee is able to accurately evaluate how well the proposed site, grading, and landscaping improvements plans relate to and compliment the original natural character of the Homesite.

At Laguna, every Homesite Design (including landscaping) directly affects those Homesites surrounding it, as the Laguna viewscape is one overall landscape image without any individual Homesite boundaries. Therefore, for the unique Laguna landscape to be preserved, it becomes imperative for every Homesite to be carefully and successfully improved, and for every Homesite's landscaping to be accurately restored to the naturally existing landscaping originally found on it.

56 **Retention and Ridgeline Area Landscaping**

In Retention and Ridgeline Areas, the landscaping design on every Homesite will require special care. The Landscape Master Plan is very specific about requiring heightened landscaping and tree planting on these sensitive Homesites, which requirements depend on many factors, including but not limited to: the specific Homesite's proximity to a Preservation Area, the specific location of the Lot, the size and shape of the Lot, the size and shape of the building envelope, the proposed home's architectural design, and the proposed home's visibility from street rights-of-way.

5.7 Plant Salvage

Whenever practicable, the Committee highly encourages a Homesite's native plants, trees, and other vegetation which is not initially retained on the Homesite to be properly stored, salvaged, and replanted on the Site after construction of the home and other improvements take place. If this salvage and replanting is conducted appropriately, the Homesite's native vegetation will become an invaluable source for restoring the

Site's natural rejuvenation, regrowth, and unique character. The Committee must pre-approve each Homesite's replanting plan and replanting execution (by considering both arrangement and quality), so that each Site restoration at Laguna clearly reestablishes and enhances the original Site's unique landscape and native character.

Specifically, the Committee requires the following care steps to be taken during salvage and replanting:

1. Although salvage plants are adapted native plants, very careful continuing maintenance is required to ensure successful replanting. Owners are responsible for seeing that the plant salvaging process, however lengthy, is allotted adequate time to be precise and successful. In many cases, this will require Owners dedicating months to correctly boxing and removing trees and large shrubs.
2. Owners should recognize that not all native plants on the Homesite will be suitable for salvage. If a Homesite's plants are too large, are inaccessibly located, are surrounded by poor-quality soil, have poor survival history, or are not recommended for resalvage due to seasonal conditions, the Owner shall be responsible for discovering an alternate resolution for providing proper revegetation to the Homesite.
3. In some cases, even with careful attention to replanting, salvage plants may not survive or fully recover to their once-healthy state. If the Committee decides any salvage plant on a Site is too unsightly to remain in place, the Owner shall be responsible for removing and replacing the salvage plant with a Committee-approved replacement.
4. During all salvage operations, special care must be taken to minimize Homesite disruption as much as possible and to ensure the Site's Natural Area always remains untouched.
5. On every landscaping plan, salvage plant characteristics (including size, variety, source, and maintenance requirements) must be specifically delineated and described. Additional

salvage trees and plants from other “local area” sources may be planted if they are completely native, if they are planted so they appear as part of a natural and undisturbed existing landscape, if they appear as though they are native to the Site, and if the Committee, in its sole discretion, approves them.

6. The Committee requires that any person considering the salvage and/or replanting of any native plant consult a native plants salvage expert, and then submit a proper plan of such proposed salvaging to the Committee. It shall always be the Owner’s responsibility to ensure that any person salvaging/replanting on such Owner’s Homesite is fully complying with any applicable laws pertaining to the salvage and planting of native plants, or the like.
7. The Committee must always specifically pre-approve any salvage and replanting activities on a Homesite.

58 Revegetation of Disturbed Areas

Landscape disturbance on existing Homesites may only occur under the following conditions: (1) if the disturbance is for construction purposes, (2) if the disturbance falls completely within the Site’s building envelope, (3) if the disturbance is in an area(s) which has been pre-approved by the Committee, (4) if the disturbance area is completely re-landscaped upon the completion of construction, and (5) if the re- landscaping is conducted according to the Homesite’s pre-approved landscaping plan. The landscaping plan submittal must include the following in order to be pre-approved by the Committee: size, variety, and location of every existing tree and plant on the Homesite; and any and all other applicable Homesite landscaping features, including but not limited to a detailed description of ground plane character.

During the re-landscaping process, all Transition Areas on a Homesite must be fully restored to match the Site’s Natural Area. In some cases, the Committee may even require more re-landscaping than the amount that existed in the Transition Area initially, in order to create the closest possible match to the Homesite’s Natural Area. All Close-In Zones must be landscaped so they completely match the Natural Area or they must be landscaped so they begin closest to the home as an enhanced type of landscaping (purported to compliment the architecture of the home structure) and smoothly transcend to completely match the Site’s natural landscape by the time they meet the edges of the Transition Area(s) and/or Natural Area(s).

Complete landscape restoration is achieved by replicating all features of the existing natural landscape. At Laguna, complete Homesite restoration includes the following steps:

1. First, either restoring original or creating native-looking grading shapes which blend into existing drainage ways, landforms, and Site construction. The Committee will never approve shapes that are arbitrary or that appear to be artificial.
2. Secondly, the finished, exposed ground surface must match the ground surface on the rest of the Site. It is important to note that each Homesite has its own unique ground pattern and its own coloring as related to soil, sand, and surface rock. As well, each Site has its own types of rocks, and stones which should be properly identified and replicated. Though seemingly tedious, the carefully-executed surface matching becomes key to maintaining the Homesite's unique, native mountain character. Thus, other surface treatments (i.e. rocks not found on the particular native Site, wrongly colored rocks, rocks with decorative geometric shapes and/or patterns, rocks which are clearly artificial, etc.) will not be approved or allowed by the Committee.
3. Next, trees and plants (including any native grasses) must be selected from a palette of the existing vegetation varieties already identified and established on the Site.
4. Lastly, any plant locations (i.e. spacing, staggering, etc.), variety mixes, densities, and/or arrangement(s) must enhance and compliment the Homesite's existing natural theme. Therefore, the Committee may require extra elements (i.e. down trees, native grassy areas, leaf litter, dry waterways, matched outcropping, etc.) to be added depending on a Site's specific characteristics.

Blending is the technique by which a smooth transition happens between the complete native landscape on a Site to the carefully designed and articulated dense arrangement of plants and vegetation which is found closely surrounding the home structure. Proper blending allows an authentic, yet enhanced landscaping system to be created and maintained immediately adjacent to the Homesite's constructed building improvements, which will screen and shape views from surrounding Sites, Open Spaces, Common Areas, and roadways; will aid in sun control; and will soften the transition between the Site's architectural improvements and the land itself.

Specifically, this enhanced landscaping is defined as dense groupings and mixings of vegetation which might not normally occur in their exact location close to the home, but which appear as natural landform features and serve to compliment both the home structure and the Site's native landscape

character. As enhanced landscaping is proposed, the predominant, denser features should be located nearest the home and the more natural features should be located farther away from the home.

All unsightly disturbance(s) or Damage caused to the Homesite landscape shall always be repaired. Damage may occur naturally either as a result of improvements or for completely undetermined reasons. Regardless of the reason, all Damage(s) on a Site (no matter when or where they occur) must be repaired appropriately and completely. All landscaping (whether required by the Committee at any time or requested by the Owner) shall always be restoration which has been pre-approved by the Committee.

As well, to thoroughly reestablish the native landscape environment, any and all revegetation landscaping will require a sufficient temporary irrigation. Each plant may easily have separate and varying water needs; thus, all irrigation system(s) must be flexible enough to allow for both managed reduction(s) in water flow amounts and separate irrigation schedules for certain independent selections of plants. Although at some point this supplemental irrigation may be terminated, a Site's irrigation system must be in place long enough to create a permanent, quality, year-round, underground, self-serving system. As well, all irrigation equipment must be located and/or screened in such a way that it is never visible from adjacent Homesites, Common Areas, Open Spaces, and/or roadways.

Finally, the Committee requires that every Homesite Owner at Laguna make genuine efforts to return all disturbed areas on his/her Homesite to the most accurate rendition of the Site's original native and undisturbed natural landscape as quickly and as completely as possible.

5.9 Plant Density

For each Homesite's proposed landscape to achieve a finished look that is both natural and appropriate to its character, every single piece of vegetation (i.e. tree, plant, etc.) must be arranged and spaced exactly according to its natural location pattern. As each Site may easily vary in plant groups arrangements and spacing (density), the Natural Area on each Site should be used as a model for plant density on the whole Site. As the landscape plans are designed, sufficient information about the Homesite's existing Natural Area(s) must be illustrated and explained, so the Committee can properly determine how closely the proposed plant sizes, spacing, etc. relate to the existing landscape characteristics.

The final decision about plant density and spacing will also depend on factors such as the plants' initial sizes and their respective growth rates. Generally, smaller plants require close spacing initially (accompanied by subsequent thinning if the landscape appears over-crowded in the future). Other

factors to consider when planning vegetation density are the specific locations on the Homesite which require/allow planting, Site topography, Site soil conditions, available water to the Site, and/or any other Site conditions that may increase or decrease the amount of appropriate plant density.

Lastly, plant density is unique on every Homesite in Laguna, as native trees, shrubs, groundcovers, and grasses may differ drastically throughout the Community. Although every plant density evaluation and approval is highly Site-specific, patterns on a Site are as follows:

1. Plant density within the Transition Area(s) should replicate the plant density within the neighboring Natural Area(s).
2. The Committee, in its sole discretion, may approve and/or require planting which is denser than expected in the Transition Area Close-In Zone for very Site-specific purposes.
3. Plant density within a Site's Private Area may be that which the Owner desires, so long as these plants are not visible at all from adjacent Homesites, Common Areas, Open Spaces, and streetscapes.

All landscape material must meet the minimum required sizes and density, or the Homesite Owner will be required to replace per the Committee's discretion.

5.10 Groundcover

On some Laguna Homesites, the Committee may approve certain locations for a new and/or enhanced groundcover area (i.e. specific grasses, plants, and/or vines defined below) may be created. At Laguna, groundcover planting areas may only be developed in one of the following ways:

1. As an extension of naturally occurring groundcover on the adjacent existing landscape, or
2. As a replica of naturally occurring groundcover that appears authentic (as decided by the Committee, in its sole discretion).

The Committee shall not approve any proposals for areas which present the appearance of traditional turf for groundcover in front or rear yard improvements.

Groundcover may only be open, natural-looking, seasonal native grasses or low-growing, seasonal

native plants/vines. In order for this groundcover to grow properly and to look appropriate, this seasonal plant variation and respect for natural growth patterns must be present. The Committee will approve groundcover if, in the Committee's opinion and sole discretion, the cover is placed in logical areas along the Site's contour, the cover is both practical and aesthetically pleasing in its location on the Homesite, the cover fits with the home's orientation and architecture, and the cover has edges which naturally blend into the rest of the Homesite's landscaping.

The Committee will not approve any groundcover proposal where the grass, etc. resembles traditional turf in any way, looks like a traditional residential front or back yard, and/or appears as a permanent or artificially supported, year-round, defined, green and/or manicured lawn area.

Groundcovers which are inorganic or rock may only be used in the Transition Area of a Homesite if they exist on the adjacent undisturbed Natural Area surfaces on such Homesite, and these kinds of groundcovers must only be used in the same manner as they exist in these adjacent Natural Areas. Inorganic and rock groundcovers must always replicate the native color, shape, size and mix of materials on the existing ground plane. The existing ground must always remain natural in appearance (i.e. it cannot be raked in visible patterns, cleaned, manicured, or otherwise modified).

Groundcovers which have a designed pattern, are decorative, are artificially shaped, or are made of an arrangement of inorganic materials such as sand, gravel-screened rock, or boulders may never be used as ground plane improvements in the Natural and/or Transition Area(s) on a Homesite. As well, organic groundcovers such as manufactured non-native bark chips, compost, and/or prepared mulches may never be used in the Natural and/or Transition Area(s) on a Homesite. However, any kind of ground plane groundcover may be used on a Homesite's Private Area, so long as it is not in any way visible from any neighboring Homesites, Open Spaces, Common Areas, or roadways.

5.11 Turf

At Laguna, all visible Homesite landscapes shall appear as though they are completely native. Therefore, turf is never approved in the Natural and/or Transition Area(s) of a Homesite. The Committee will only consider approving the use of turf within a Homesite's Private Area if the following conditions are met:

1. The turf is comprised of grasses which are listed on the Approved Plant List under "Grasses" and
2. The turf is only planted in places which are not at all visible from any and all neighboring Homesites, Open Spaces, Common Areas, or roadways.

Any and all Committee-approved turf must be hybrid and non-seeding, and it must be maintained and/or irrigated in such a way that it does not ever adversely affect any Laguna improvement, facility, neighboring property, wildlife, and/or native plant life. If, at any time, the Committee, in its sole discretion, determines that previously-approved turf has become a nuisance for any reason, the Committee, in its sole discretion, may require that existing turf to be immediately eliminated altogether and/or to be immediately replaced with another Committee-approved turf variety.

Most importantly, only Committee-approved, seasonal native grasses shall be used as a natural landscaping element on Homesites within Laguna.

5.12 Hardscape

At Laguna, hardscape is defined as the following: any non-architectural, inorganic improvement and/or modification to a Homesite's natural surface, which falls within the Homesite's Natural Area or the Site's building envelope. Hardscape includes improvements such as: paths, walkways, on-site parking, improved drainage ways, hard surface landscaped areas, and/or similar improvements which may not be discussed in these Guidelines. Any hardscape improvements on a Homesite require Committee approval prior to the start of construction and/or installation of the improvements. The Committee must fully review and approve the proposed location(s) of the hardscape, material types to be used, hardscape colors, and/or any other changes to the existing Site or its landscape that could in any way result from the hardscape.

Hardscape used on Laguna Homesites must comply with the following:

1. All landscape-related hardscape must appear natural and appropriate to the Homesite's existing landscape.
2. Natural surface materials, such as decomposed granite and/or surface rock must match existing colors and native textures. Manufactured products such as brick, pavers, or patterned / colored concrete must closely match the adjacent natural surface colors.

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3. Whether the hardscape is natural or man-made, it must be installed/situated in such a way that it follows the natural patterns of native grasses/groundcovers which are planted to soften the improved area.
 4. All walks and/or pathways must be narrow in width (i.e. two (2) to four (4) feet), and it must follow the natural ground contour lines.
 5. All patios must be shaped naturally and must cause the least amount of Site modification possible. Finished patios must be located so it is apparent that they were carefully sited and shaped to fit perfectly into the most practical naturally occurring location for them on the Homesite.
 6. All improvements such as elevated surfaces, curbing, swales, piping, and/or grading which alters the approved drainage plan for the Homesite must be avoided. Modifications such as these can easily redirect, concentrate, or pond storm water, which will cause erosion and water damage. Instead, porous materials and careful installation methods will help reduce water runoff and the damaging of concentrated water flows.
 7. All ancillary hardscape improvements and/or associated modifications (i.e. revised grading, added landscaping, low walls, built-in seating, lighting, etc.) must be carefully contemplated in design and purpose by the Owner, Architect, and/or Builder, and must be pre-approved by the Committee. The Committee intends that any such constructed hardscape improvements will both (1) appear as a visual extension of the home's architecture (including the architecture of any other improvements on the site) and (2) feel like they directly relate to and are a visual extension of the acknowledged and approved adjacent landscape characteristics for the particular Homesite.

5.13 Water Features

Constructed water features are not allowed in the Natural and/or Transition Area(s) of any Laguna Homesite. However visually attractive and sophisticated these water features may potentially be, any water which is artificially introduced/added into the natural environment may easily become disruptive. Although water features are discouraged on Laguna Homesites, the Committee may specifically consider and approve water features located in the Private Area of a Homesite if such features meet the following criteria:

1. The water feature(s) are not at all visible from neighboring Homesites, Open Spaces, Common Areas, or roadways.
2. The water feature(s) are designed in proportion to the Homesite's architectural and landscaping themes.
3. All water feature mechanical equipment is completely screened from the view of neighboring Homesites, Open Spaces, Common Areas, or roadways.
4. The water feature(s) are designed to minimize water use in normal operation and typical maintenance.
5. The water feature(s) and any and all of their lighting, mechanical equipment, water spray, drainage mechanisms, etc. must be constructed and maintained so as to never adversely affect neighboring Homesites, Open Spaces, Common Areas, roadways, native plants, and/or animals/wildlife in any way.
6. Finally, the water feature(s) may not create any kind of nuisance or extra maintenance by having complicated mechanical operations, by attracting animals or insects, or by supporting the existence of non-native plant life.

5.14 Gardens and Non-Native Planting Areas

Any and all non-native planting areas may only be established and maintained within the section of a Homesite's Private Area which is not visible from any and all neighboring Homesites, Open Spaces, Common Areas, or roadways. Non-native planting areas include but are not limited to the following: decorative gardens that emphasize flowering plants; gardens comprised of organized flower arrangements, non-native shrubs, and/or vegetables; and orchards and/or unnatural appearing groupings of shrubs and/or trees. This limitation does not, however, prohibit a Site from having the enhanced planting areas (which are comprised of native plants and are in the Transition Area's Close-In Zone) discussed in Section 5.7.

The following must be hidden from all views from neighboring Homesites, Open Spaces, Common Areas, or roadways: trash storage, compost areas, screens, netting and/or other animal barriers, lighting, irrigation mechanisms, and/or any kind of mechanical equipment.

In addition, gardens and/or planting areas may never be maintained in any form on any Laguna Homesite if they contain any plant which is not Committee-approved. Any plant which is not specifically listed on the Approved Plant List, Section 3.17, shall be approved by the Committee prior to planting.

All plants that the Committee determines could potentially create a nuisance (i.e. because of excessive water use; excessive water runoff; excessive litter, seeds and/or plant debris; attraction of animals/insects; and or the threatening of existing native landscape in any way) may never be maintained on a Homesite.

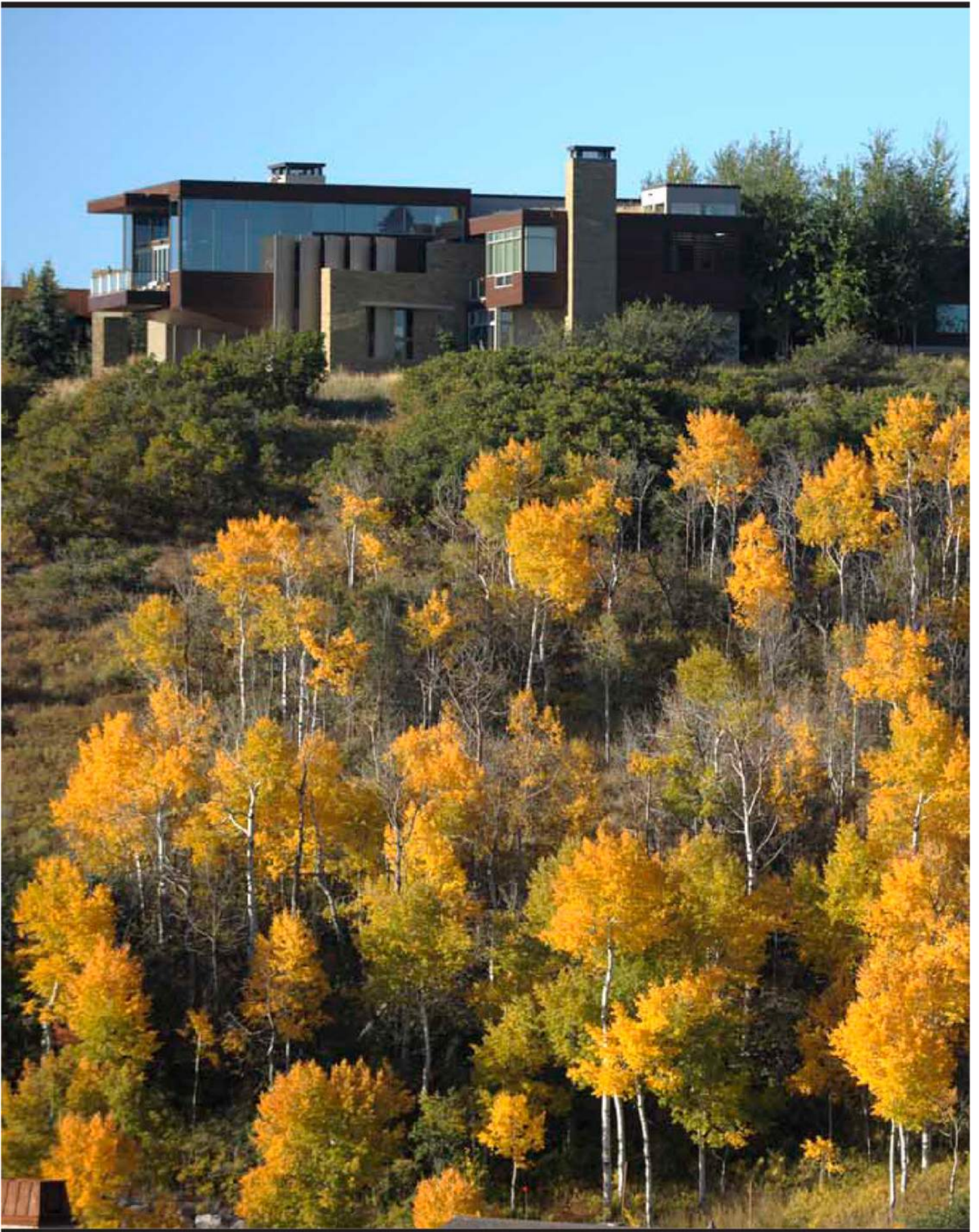
All garden-associated improvements (i.e. tool and equipment storage) or growing areas (i.e. greenhouses) must be designed so they are an integral part of the home's architecture and must be evaluated and approved by the Committee as part of the Homesite Design Plans. The use of other visibly decorative plantings, such as those placed in architectural planters, pots, and/or other building-related improvements, shall always be evaluated by the Committee and approved prior to their implementation on a Homesite. Such plantings must always appear as an integral part of the Homesite Design and the actual home's architecture, rather than looking like landscaping enhancements which have been contemplated and added to the Homesite subsequent to the design of the home.

5.15 Access to Path System

Access to approved, designated Laguna pathways is only allowed at specifically designated trailheads. On a case-by-case basis, the Committee may evaluate and approve individual access to a Laguna path from a certain Homesite. In addition to having the necessary Site-specific characteristics warranting allowance of a special Owner access path (as determined by the Committee, in its sole discretion), the following general conditions must be met for the Committee to consider such pathway access for any Homesite Owner:

1. The Owner shall accept sole responsibility for any and all costs relating to the Owner's requested pathway improvements, maintenance, removal, and/or restoration.
2. The Homesite must be directly adjacent to the designated Open Space containing the approved Laguna path or the approved Laguna path must cross the Homesite itself (i.e. in an easement). As well, the Committee must pre-approve the specific location of the new access path and any and all access improvements which will occur by the Owner across the Open Space for the purposes of connecting to the Laguna pathway.

3. The Owner's access to the Laguna pathway does not/will not encroach on adjacent Homesites and/or adjacent Homesites' access to the pathway.
4. The location and use of the Owner's added pathway may not create a nuisance to any neighboring Homesites, Open Spaces, Common Areas, public rights-of-way, or roadways.
5. The Owner's pathway shall only be used by the Owner for access to the Laguna pathway and shall not be used by other persons as a through-way and/or have the appearance of being a "general use" addition to the approved Laguna path.
6. The Owner's pathway surface shall only be the natural, existing surface material already present, as pathway definition will naturally occur through the Owner's use of the path. Created delineation along the path (such as rock-lined edges or raked surfaces) shall not be used, nor shall any extra material be added to create the Owner's pathway.
7. The Owner's pathway shall resemble a "game trail" in appearance and size, meaning that it is unobtrusive, natural-looking, and scaled in proportion to the native, undisturbed topography of the land.
8. The Owner's pathway shall not: cause any vegetation to be removed, cause erosion, or cause any Site features to be disturbed in any way.
9. The Owner shall accept responsibility for installing any signage and/or appropriate graphics improvements the Committee, in its sole discretion, deems necessary to avoid confusion regarding the Owner's pathway and/or the Laguna pathway.
10. The Owner's pathway approval is temporary at all times. At any time, the Committee may, in its sole discretion, determine that the Owner's pathway is incompatible with the intent of the Laguna pathway system and request that the pathway be repaired, modified, or removed and restored to the natural landscape conditions. Complete compliance to any such Committee request shall always be required by Owners.



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APPENDIX C - DEFINITIONS

To warrant the smooth reading and understanding of these Design Guidelines, the following capitalized terms shall have the meaning given them in the Declaration or the By-Laws:

- 321.1 Governing Documents (as defined in Section 1.4 of the Declaration), including: Declaration, Supplemental Declaration, Articles of Incorporation, By-Laws, Design Guidelines, Use Restrictions, and Development Agreement.
- 321.2 Architectural Review Committee (referred to herein as the “Committee”)
- 321.3 Board of Directors (referred to herein as the “Board”)
- 321.4 By-Laws
- 321.5 Common Area
- 321.6 Laguna or Community (sometimes referred to herein as the Laguna Community)
- 321.7 Conservancy
- 321.8 Conservancy’s Agent
- 321.9 Declarant
- 321.10 Development Agreement
- 321.11 Lot
- 321.12 Owner
- 321.13 Plat
- 321.14 Record, Recording, or Recorded
- 321.15 Residence
- 321.16 Supplemental Declaration
- 321.17 Village

The following capitalized terms shall have the meaning given them in the Development Agreement:

1. Building Permit
2. City of Herriman
3. Developer
4. Estate Lot
5. Incentive Density
6. Open Space
7. Laguna LMPC Plan and Laguna LMPC Plan Book of Exhibits (as they are attached as an integral part of the Development Agreement)
8. Residential Unit
9. Resort Unit
10. Viewshed

The following capitalized terms, if defined in the Declaration or the Development Agreement, shall keep their meanings defined therein, and shall be more specifically defined below for the purposes of these Design Guidelines only. Capitalized terms delineated below for the first time shall be defined by the following for the purposes of these Design Guidelines and for Laguna Design Review. Any terms which are not listed in this Section 1: Definitions shall be defined in the Design Guidelines.

1. **Architect:** Either a (1) Licensed Architect or an (2) unlicensed designer, engineer, draftsman, or other person who properly submits Committee requisites and is pre-approved by the Committee to fully participate as an Architect in connection with an Owner whose Lot is undergoing or will immediately (upon proper Architect selection) undergo Design Review.
2. **Builder(s):** An Owner's General Contractor (including any and all of such Contractor's subcontractors, employees, agents, materialmen, and other persons working in conjunction with the construction of improvements on such Owner's Lot.

-
3. **Committee Member:** Any particular member of the Committee, as set out in Section 8.1 herein.
 4. **Committee Representative:** Any Committee Member or designated person(s) who is, at a Committee Member's request, acting on behalf of a Committee Member or of the Committee as a whole.
 5. **Damage:** Damage caused to the Homesite or to any neighboring Homesite(s), Open Space(s), Common Area(s), roadway(s), public rights-of-way, or any other property within Laguna by the Owner and/or the Owner's Architect(s) and/or Builder(s) during construction on the Homesite, as well as any defect, problem, disturbance, or damaging effect caused by noncompliance with or violation of the Guidelines or of the Governing Documents or by nonconformance to state or local laws, ordinances, and regulations (including building ordinances and/or zoning requirements).
 6. **Design Guidelines:** The Laguna Design Guidelines as defined in the Declaration and adopted as part of the Governing Documents, including any and all attached Supplemental Design Guidelines (which may either add or modify restrictions applicable to a certain Village in the Community), Appendices, and/or Amendments thereto. Also referred to herein as "Guidelines."
 7. **Design Review:** The comprehensive Architectural Review process by which an Owner submits plans for building a residence on a Laguna Homesite, which process begins with Architect Selection and ends with Final Inspection and Final Release (See Section 2 for a complete Design Review list).
 8. **Development Agreement:** That certain Development Agreement dated [February 29, 2022](#), and more fully defined in the Declaration, including any and all Exhibits thereto, and specifically referencing in these Design Guidelines the following Exhibits: the Landscape Master Plan and the Wildfire Prevention Program.
 9. **Final Release:** The final phase of Design Review (as described in Section 7.14 herein), which merits the return of the Performance Deposit Agreement, the Notice of Voluntary Lien, and the Performance Deposit, or any balance thereof.
 10. **Fire Department:** Herriman City Fire Service District

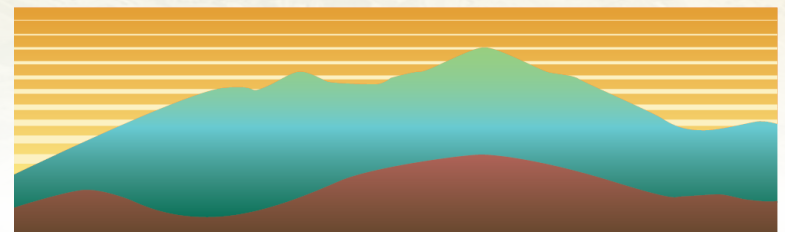
11. **Governing Documents:** The seven (7) items listed under “Governing Documents” above, as they are defined in Section 1.4 of the Declaration, including any and all amendments, appendices, and/or supplements to each of those Governing Documents respectively, and any rules and/or regulations adopted or promulgated by either the Conservancy or the Committee, in the Conservancy’s behalf.
12. **Gross Total Area:** This Area is comprised of all areas of the home including all garage(s), unconditioned storage space/mechanical rooms, and all covered porches/patios on the ground level and all open and covered porches on the upper level(s). This space is specifically measured starting at the outside perimeter of the home.
13. **Homesite Design:** The overall, complete aesthetic and architectural vision for a Homesite, including landscaping, architecture, and any other improvements intended for the Homesite.
14. **Landscape Master Plan:** Exhibit J of the Development Agreement, and referred to herein as being applicable to the Community.
15. **Lot or Homesite or Site:** The specific Lot currently causing an Owner (including such Architect(s) and such Owner’s Builder(s)) to participate in Design Review at Laguna.
16. **Net Livable Area or Enclosed Livable Space/Area:** The home’s “net livable area” is comprised of all of the enclosed livable area of the home, including stairs and elevators (which are calculated one time as a shaft through the home on the level of the home where they occupy the most total area), and “walk out” floor levels. The following areas are not included in the “net livable area”: (1) garage(s), (2) basement(s) (so long as the basement’s finished ceiling and all four sides of the basement are completely below existing, pre-construction grade on the Lot; there is no direct ingress or egress at the basement level to the exterior; and there are no window wells or other openings which would allow certain habitable uses such as sleeping areas to be created in the future. Basements meeting such requirements may be conditioned spaces.), (3) unconditioned storage area(s), unconditioned mechanical rooms, fireplaces, any and all completely walled-in chases/cavities and exterior and interior walls except for door openings.
17. **Owner:** The particular Owner of the Lot presently undergoing Design Review at Laguna.

-
18. **Performance Deposit:** The Performance Deposit which is defined in Section 7.9 herein.
 19. **Performance Deposit Agreement:** The two-part agreement, as defined in Section 7.9 herein, including the Deposit Agreement and the Notice of Voluntary Lien.
 20. **Plan(s):** Any Site Plans, Floor Plans, Elevations, drawings, specifications, models, depictions, and/or other plans submitted as part of Design Review.
 21. **Retention and/or Ridgeline Area:** A visually sensitive area within Laguna in which development and activities may occur so long as such development is not visually evident, or it is subordinate to the characteristics of the natural landscape. For the purposes of these Guidelines, Retention Areas are those areas facing the eastern Viewsheds and Ridgeline Areas are those which are positioned on the top of a ridgeline in the Community. Lots within both of these Areas shall have special architectural restrictions, which restrictions are fully set out and detailed herein.
 22. **Transition Date:** The date on which the Class B control period terminates, as such control period is defined in the Declaration and the By-Laws. For the purposes of these Guidelines, this is the date on which the Conservancy Agent assumes the Conservancy duties previously owned by the Declarant.
 23. **Wildfire Prevention Plan:** Exhibit L of the Development Agreement and referred to herein as being applicable to the Community.

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Attachment E

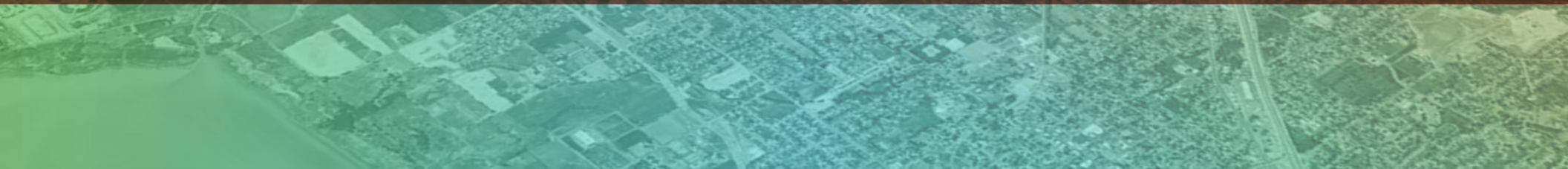
Joint Land Use Study (JLUS) for Camp Williams




WEST TRAVERSE MOUNTAIN
Compatibility Area Study



This study was prepared under contract with the Mountainland Association of Governments, with financial support from the Department of Defense Office of Local Defense Community Cooperation. The content reflects the views of the key partners involved in the development of this study and does not necessarily reflect the views of the Office of Local Defense Community Cooperation.





WEST TRAVERSE MOUNTAIN Compatibility Area Study

Final

Prepared for



Mountainland Association of Governments
586 E 800 N
Orem, UT 84097

Prepared by



2020 North Central Avenue, Suite 1140
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October 2022



West Traverse Mountain Compatibility Area Study

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Acronyms

A

A	Agriculture
ACUB	Army Compatible Use Buffer
AD	Airworthiness Directives
AGL	Above Ground Level
AGCW	U.S. Army Garrison Camp Williams
AQ	Air Quality
APZ	Accident Potential Zone
ARPA	American Rescue Plan Act
AT	Anti-Terrorism

B

BGEPA	Bald and Golden Eagle Protection Act
BIO	Biological Resources
BLM	Bureau of Land Management
BMP	Best Management Practices
BRIC	Building Resilient Infrastructure and Communities
BST	Bonneville Shoreline Trail

C

CAA	Clean Air Act
CARROT	Clean Air Retrofit, Replacement, and Off-Road Technology
CAS	Compatibility Area Study
CFMO	Construction, Facilities and Maintenance Office
CFR	Code of Federal Regulation
CO	Carbon Monoxide
COM	Communication/Coordination
CR	Cultural Resource
CRMP	County Resource Management Plan
CSP	Concentrated Solar Power
CWA	Clean Water Act
CZ	Clear Zone

D

dB	Decibel
dBA	A-weighted Decibel
dBc	C-weighted Decibel
dBp	Peak Sound Level
DCIP	Defense Community Infrastructure Pilot
DNL	Day-Night Average Sound Level
DOD	Department of Defense



West Traverse Mountain Compatibility Area Study

DOE Department of Energy

DOI Department of the Interior

DPG Dugway Proving Ground

D/S/S Dust/Smoke/Steam

E

EA Environmental Assessment

ED Energy Development

EIS Environmental Impact Statement

EOP Emergency Operations Plan

EPA Environmental Protection Agency

ESA Endangered Species Act

EUL Enhanced Use Lease

EVO Emergency Vehicle Operations

F

F Fahrenheit

FAA Federal Aviation Administration

FAR Federal Aviation Regulation

FBI Federal Bureau of Investigation

FCC Federal Communications Commission

FFSL Forestry, Fire and State Lands

FMCW Frequency-Modulated Continuous-Wave

B

FP Force Protection

FR Forestry Recreation

FSC Frequency Spectrum Capacity

FSI Frequency Spectrum Interference/Impedance

H

HA Housing Availability

HAP Hazardous Air Pollutants

HUD Department of Housing and Urban Development

HQ Headquarters

I

I-15 Interstate 15

ICRMP Integrated Cultural Resources Management Plan

IDA International Dark-Sky Association

IE Infrastructure Extension

IES Illuminating Engineering Society

IGSAs Intergovernmental Support Agreements

INRMP Integrated Natural Resources Management Plan

IONMP Installation Operational Noise Management Plan

IWFMP Integrated Wildland Fire Management Plan

J

JLUS Joint Land Use Study

K

CIAS Knots Indicated Airspeed

L

LAR Light Armored Reconnaissance

LAS Land/Airspace Competition

LED Light Emitting Diode

LEG Legislative Initiative

LG Light and Glare

LU Land Use

M

M Manufacturing

M&G/MG Mining and Grazing

MAG Mountainland Association of Governments

MCAOD Military Compatibility Area Overlay District

MEB Maneuver Enhancement Brigade

MEDCOM Medical Command

MF Multi-Family/High Density Residential

MIDA Military Installation Development Authority

MIL HNDBK Military Handbook

MIR Military Installation Resiliency

MIRRS Military Installation Resiliency Risk Study

ML Military

MOA Memorandum of Agreement

MOCA Military Compatibility Overlay Area

MOU Memorandum of Understanding

MPO Metropolitan Planning Organization

MU Mixed Use

MVC Mountain View Corridor

MWR Military, Welfare, and Recreation

N

NAAQS National Ambient Air Quality Standards

NCO Non-Commissioned Officer

NEPA National Environmental Policy Act

NFP National Fire Plan

NHPA National Historic Preservation Act

NPDES National Pollutant Discharge Elimination System

NOAA National Oceanic and Atmospheric Administration

NO₂ Nitrogen Dioxide

NOI Noise

NSA National Security Agency

NSR New Source Review

NVG Night Vision Goggle



West Traverse Mountain Compatibility Area Study

O

O3	Ozone
OLDCC	Office of Local Defense Community Cooperation
ONMP	Operational Noise Management Plan

P

PC	Planned Community
PK15	Impulsive Peak Noise Levels
PM	Particulate Matter
POC	Point of Contact
PS	Public Service
PT	Public Trespassing
PV	Photovoltaic

R

R	Residential
RA	Residential Agriculture
RA	Restricted Airspace
RA	Restricted Area
RC	Roadway Capacity
RD	Rural Density
RE	Resiliency

REPI	Readiness and Environmental Protection Integration Program
RTI	Regional Training Institute
RTP	Regional Training Plan
RTK	Rio Tinto Kennecott
RTP	Regional Transportation Plan

S

SA	Safety
SAAO	State Army Aviation Office
SARNAM	Small Arms Range Noise Assessment Model
SFG	Special Force Group
SGCN	Species of Greatest Conservation Need
SHMP	State Hazard Mitigation Plan
SHW	Solar Hot Water
SIP	State Implementation Plan
SITLA	School and Institutional Trust Lands Administration
SLC	Salt Lake City International Airport
SNR	Scarce Natural Resources
SO2	Sulfur Dioxide
SOF	Special Operations Forces
SR	State Route
SRP	Sustainable Range Program

SUA Special Use Airspace
SWMP Stormwater Management Plan

T

TAZ Traffic Analysis Zone
TH Traditional Holdings
TIP Transportation Improvement Plan
TRACON Terminal Radar Approach Control
T-TAC Tickville Training Area Compound

U

UAS Unmanned Aerial System
UCAIR Utah Clean Air
UCWPP Utah County Wildfire Protection Plan
UDOT Utah Department of Transportation
UDWR Utah Department of Wildlife Resources
UFA Unified Fire Authority
UFC Unified Facilities Criteria
U.S. United States
USACHPPM U.S. Army Center for Health Promotion and Preventive Medicine
USC United States Code
USDA U.S. Department of Agriculture
USFWS U.S. Fish and Wildlife Service

USSOCOM U.S. Special Operations Command
UTAC Utah Translation and Analysis Center
UTC Utah Training Center
UTNG Utah National Guard
UTARNG Utah Army National Guard
UU University of Utah

V

VO Vertical Obstructions
V Vibration
VIIRS Visible Imaging Infrared Radiometer Suite

W

WFMP Wildland Fire Management Plan
WFRC Wasatch Front Regional Council
WQQ Water Quality/Quantity
WTM West Traverse Mountain
WTSLF West Traverse Sentinel Landscape Fund
WUI Wildland Urban Interface



West Traverse Mountain Compatibility Area Study

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1

Introduction

Military installations generate thousands of jobs and billions of dollars in regional economic impact across the nation. Sustainment of these military installations, and of associated missions and facilities, helps underpin the vitality of local communities, economies, and industries. Ensuring compatibility between military bases and surrounding communities through partnership promotes military mission sustainment and continued presence in the local economy. The West Traverse Mountain Compatible Area Study aims to proactively identify and provide solutions that promote mission sustainability while strengthening coordination efforts between the installation and neighboring communities.



1.1 What is the West Traverse Mountain Compatibility Area Study?

The West Traverse Mountain (WTM) Compatibility Area Study (CAS) is a collaborative planning effort between the local project sponsor — Mountainland Association of Governments (MAG) — and Camp Williams, surrounding communities, local and regional stakeholders, state and federal agencies, and the public. This Study intends to expand upon the 2012 Camp Williams Joint Land Use Study (JLUS), strengthen working relationships, and encourage collaboration between community stakeholders and Camp Williams. This effort aims to identify, reduce, and prevent encroachment issues between military missions and neighboring communities while promoting development. To do this, the planning process culminates in a set of agreed-upon recommendations or implementation strategies that the military and stakeholders can execute to achieve three key goals:

- Compatible development
- Improved communication and relationships between installations and neighboring communities, now and in the future
- A decision model to guide the assessment of future land use prospects

This Study is essential for preserving long-term compatibility between Camp Williams and the surrounding areas, and will benefit both the base and the region in the following ways:

- Protecting the health and safety of nearby residents and workforce
- Enhancing a cooperative spirit between Camp Williams and local communities, and in turn, promoting comprehensive community planning with attention to compatibility
- Integrating local jurisdictions' growth policies, plans, and regulations with Camp Williams' plans

The work was funded through a grant from the Department of Defense (DoD) Office of Local Defense Community Cooperation (OLDCC), with additional in-kind funding provided by MAG. While the OLDCC was the primary funding source, study content was produced by and for the local stakeholders. MAG served as the managing agency for the project, with support from various regional stakeholders. The CAS is essential for preserving long-term compatibility and fostering mutually beneficial relationships between Camp Williams and surrounding jurisdictions.

CAS Goals and Objectives

The primary goals of the WTM Compatibility Area Study are four-fold:

- Protect the viability of current and future military operations while simultaneously guiding compatible community development
- Support regional economic vitality and environmental health
- Protect and encourage the health, safety, and welfare of residents and military personnel around Camp Williams
- Develop a decision model tool to assess future regional land use and development proposals to determine their compatibility with, or impacts on, the operations of Camp Williams.

Three objectives are instrumental to achieving the CAS goals.



Understanding

Bring together community and military representatives in an open forum to discuss compatibility findings that consider community and military perspectives and needs. Understanding is facilitated through a cohesive education and outreach program that increases public awareness regarding land use planning and provides opportunities for input.



Collaboration

Encourage cooperative, coordinated land use and resource planning by the military and surrounding communities so that incompatible community growth and development can be avoided and ways of reducing operational impacts on lands in the Study Area can be identified.



Actions

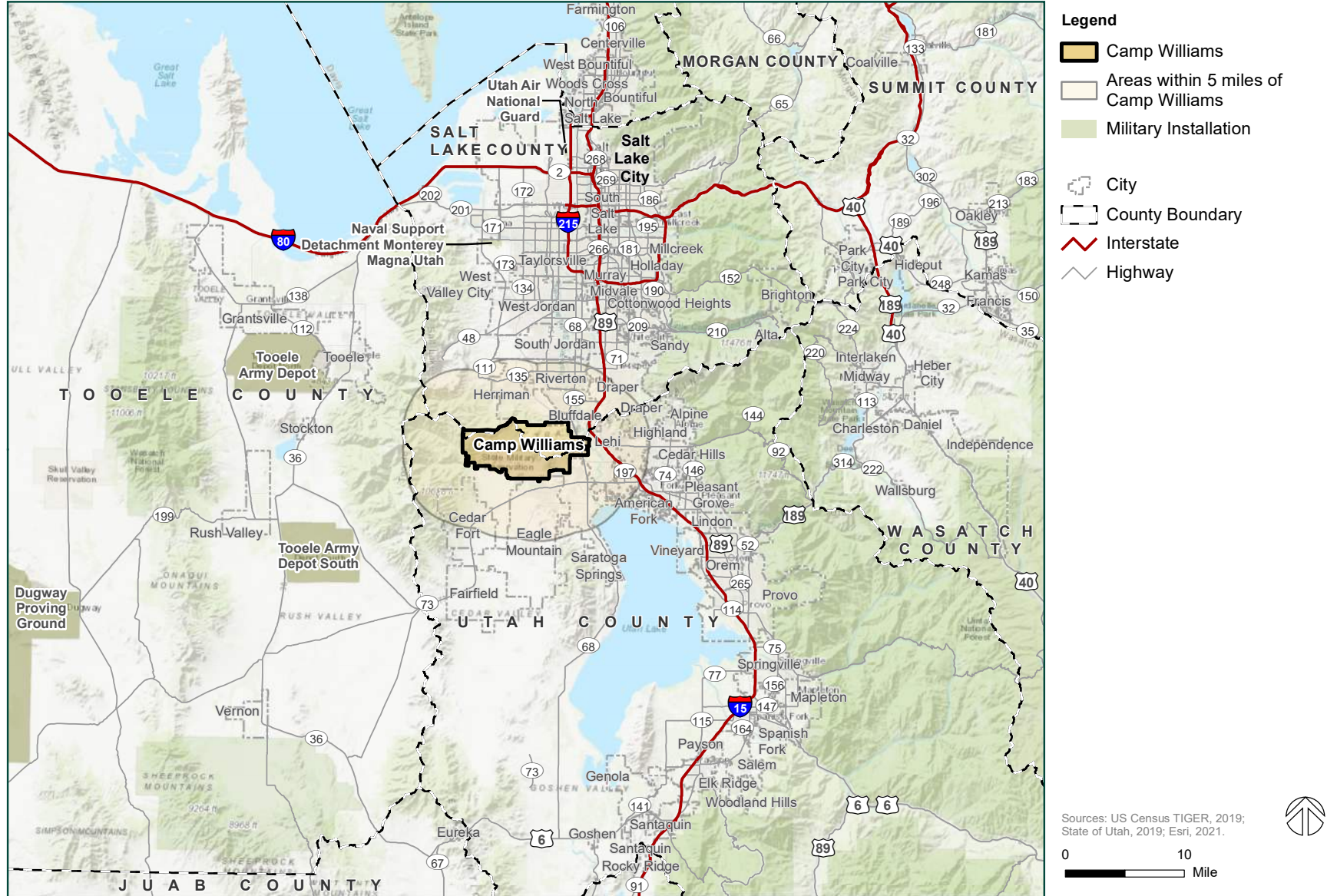
Provide a set of mutually supported tools, activities, and procedures that local jurisdictions, agencies, the military, and other stakeholders can select, prepare, and approve/adopt to implement appropriate mitigation strategies developed during the CAS process. The actions include operational measures that mitigate installation impacts on surrounding communities and local government protocols that reduce community impacts on military operations. The proactive strategies will help decision-makers resolve current issues and prioritize future projects within their communities' annual budgeting cycles.

1.2 Study Area

Camp Williams is located west of Interstate 15 (I-15) and within Salt Lake County in the north and Utah County in the south. The installation is approximately 30 miles south of Salt Lake City. The WTM Compatibility Area Study Area, depicted in Figure 1.1, covers the surrounding lands near Camp Williams that may influence or be influenced by current and future military operations. The area includes portions of Salt Lake County, Utah County, Cedar Fort Township, and the Cities of Bluffdale, Eagle Mountain, Herriman, Lehi, and Saratoga Springs.



West Traverse Mountain Compatibility Area Study



Matrix

:] i f Y % % West Traverse Mountain Compatibility Area Study Regional Area

1.3 What Is Compatibility?

Compatibility planning aims to promote a collaborative environment in which community and military entities communicate and coordinate to identify compatibility concerns and mutually supportive actions that will allow both parties to achieve their objectives. This collaborative approach provides the context in which policies and actions can be developed and recommended through the [CAS Implementation Plan in Chapter 6](#).

Many variables determine whether military and community plans, programs, and activities are compatible. A set of 25 compatibility factors (see Figure 1.2), or general compatibility categories, was used during study development to identify, assess, and establish the specific compatibility findings pertaining to current or future conditions in the CAS Study Area. These compatibility factors were further organized into three classes — social, resource, and development. The specific compatibility findings identified during the CAS are presented and assessed in [Chapter 5: Compatibility Assessment](#).

What is Compatibility?

In relation to military readiness, compatibility can be defined as the balance or compromise between community needs and interests on the one hand and military needs and interests on the other.

Figure 1.2 Compatibility Factors

Social Factors	Resource Factors	Development Factors
<ul style="list-style-type: none"> Communication/Coordination Public Trespassing Legislative Initiatives Cultural Resources Housing Availability Public Services 	<ul style="list-style-type: none"> Water Quality/Quantity Land/Air Space Competition Resiliency Air Quality Biological Resources Frequency Spectrum Capacity Scarce Natural Resources 	<ul style="list-style-type: none"> Land Use Safety Infrastructure Extension Light and Glare Roadway Capacity Frequency Spectrum Impedance Anti-Terrorism/Force Protection Dust/Smoke/Steam Energy Development Noise Vertical Obstructions Vibration

1.4 Why Is a Compatibility Analysis Study Important?

Although military installations and nearby communities may be separated by a fence line, they often share resources including land, water, transportation networks, and other natural and man-made assets. Because so many resources are shared, the activities or actions of one entity can unintentionally impact another and create conflicts — despite positive interactions among local jurisdictions, agencies, and the military.

As communities develop and expand in response to growth and market demands, they may locate incompatible development closer to military installations and associated operational areas. Uncoordinated and incompatible development can generate new or exacerbate existing

land use conflicts and other compatibility issues. This dynamic is often referred to as encroachment. Encroachment can negatively impact community safety and economic development and affect the sustainability of military activities and readiness. Therefore, addressing encroachment issues is currently one of the military's most significant operational challenges.

Military installations, local communities, agencies, and other stakeholders should collaborate to protect the long-term viability of existing and future military missions. Working together also enhances the health of economies in such communities before incompatible uses become an issue. In recognition of the close relationship between installations and adjacent communities, the OLDCC implemented the Compatible Use/Joint Land Use Study program to mitigate existing and future conflicts and enhance communication and coordination among all affected stakeholders. This program aims to preserve the economic viability and quality of life of all community and installation stakeholders on and around Camp Williams.

1.5 What is Resiliency?

Resiliency is the ability to bounce back. For this study, it refers to the ability of a military base to withstand the impacts of severe weather and adapt to changes in climate driven by a changing atmosphere. The effects of which, such as increased flood potential and wildland fires, can present operational and planning challenges to the military and surrounding communities as resources are depleted and environments altered. Military resiliency refers to the capacity and redundancies that military installations need in place to support critical systems and infrastructure; in order to sustain mission requirements in the event of emergencies, disasters, or other prolonged effects related to climate change.

Utah is historically prone to a wide range of natural events including wildfires, flooding, earthquakes, and most recently impacts of drought

that is occurring throughout the southwest United States. Camp Williams has not been immune to these events and often has been prone to wildfires which at times have impacted operations at the base.

1.6 Camp Williams Importance

Local, Regional, and Economic Importance

Locally, Camp Williams is an important economic engine contributing to the regional economy through sustained direct employment, indirect spending, and construction. Statewide, the Utah National Guard provides over 13,000 jobs, contributes over \$477 million in annual payrolls, and generates over \$840 million to Utah's gross domestic product. As the home to the 640th Regiment Regional Training Institute (RTI) and one of the largest RTI training facilities in the western U.S., Camp Williams accounts for a large portion of the Utah National Guard's employment and spending. This spending is fed back to local communities where military personnel and civilian employees reside. In addition, the installation is an essential asset to the civilian community, as it is used by local law enforcement agencies for training, by youth groups for team-building retreats, and by the public for special events.

 **\$840 Million**
Utah Gross
Domestic Product **13,000+**
Jobs Provided

Military Strategic Importance

Nationally, Camp Williams is critical to the comprehensive training of soldiers to be deployed to combat theaters worldwide. The facilities at Camp Williams allow a wide range of training at a single installation with similar environments to those found where Utah Army National Guard (UTARNG) soldiers and other military branches are deployed. For this reason, Camp Williams is a premier National Guard training facility that provides formal military training to officer candidates, non-

commissioned officers, enlisted soldiers, and trainees in 13 western states and the territory of Guam. Camp Williams also supports the 65th Fires Brigade (Artillery), 19th Special Forces Group (Airborne), 97th Aviation Troop Command, 204th Maneuver Enhancement Brigade, National Guard Recruiting, Joint Language Training Center, and U.S. Marine Corps Reserve (Company C, 4th Light Armored Reconnaissance Battalion).

Local Collaboration

Camp Williams has a strong relationship with neighboring communities. With the help of local, state, and federal partners, Utah established the West Traverse Sentinel Landscape Act, which directly aims to maintain the mission of the base by creating the West Traverse Sentinel Landscape Coordinating Committee and by facilitating a buffer zone around Camp Williams. The Act may be read in its entirety here: <https://le.utah.gov/~2018/bills/hbillenr/HB0257.pdf>. Federal partners that designate areas for sentinel landscapes include the U.S. Department of Agriculture (USDA), DoD, and Department of the Interior (DOI).

In addition to designating sentinel landscapes, federal, state, and local partners worked directly with the Department of the Army to establish an Army Compatible Use Buffer (ACUB) around Camp Williams, which aims to protect military training from the effects of encroachment by making either fee simple purchases or easement transactions that benefit both landowners and the military.

Furthermore, the DoD's Readiness and Environmental Protection Integration Program (REPI) contributes greatly to protecting the training areas crucial to the mission of Camp Williams. In coordination with state and local governments, conservation organizations, and willing private landowners, the DoD works through land preservation to minimize impacts on the military mission. As of September 2021, the REPI program has preserved 2,443 acres surrounding Camp Williams in 20 transactions.

1.7 Local Stakeholders

Local stakeholders were identified early in CAS planning process. These stakeholders were instrumental in identifying compatibility findings addressed in this Study, as well as the collaborative development of mutually beneficial strategies. In general, stakeholders included individuals, groups, organizations, and governmental entities interested in, affected by, or affecting compatibility findings and the outcome of the Study. Stakeholders identified for the WTM Compatibility Area Study included, but were not limited to, the following:

- Local jurisdictions (Salt Lake County, Utah County, Cedar Fort Township, and the cities of Bluffdale, Eagle Mountain, Herriman, Lehi, and Saratoga Springs)
- Camp Williams, its leadership, and its personnel
- Local, regional, state, and federal planning, regulatory, and resource management agencies
- Non-governmental organizations
- Other special interest groups
- The public (including residents and business owners)

1.8 How to Use this Study

The recommendations or strategies presented in **Chapter 6: Implementation Plan** should be implemented to promote compatibility with the military mission as the community continues to develop near Camp Williams and to mitigate to the extent possible any land use or compatibility issues that already exist. The Implementation Plan is the heart of the CAS and provides a toolbox of planning options to ensure that the relationship between the military and the surrounding communities remains strong and mutually beneficial. Each strategy



identifies key participants, partners for successful implementation, and a suggested timelines to aid in implementation. It is important to understand that the CAS is a recommended set of strategies and tools, not an adopted plan. A coordinated and collaborative effort by the CAS partners will be required to successfully carry out its strategies.

1.9 Next Steps: CAS Implementation Team

The CAS will be successful only if the recommendations are implemented. As is further described in **Chapter 6 Implementation Plan**, a CAS Implementation Committee should be established following the completion of the Study. The committee should include representation from each stakeholder group or agency/department that participated in the CAS and additional members, as necessary, if future issues or concerns arise. Many of the strategies developed in the Implementation Plan are designed for local government leaders, land and resource management agencies, and Camp Williams to roll them into their existing programs. Enhancing existing and establishing new communication processes, amending zoning tools, and updating long-range planning policies are some of the most cost-effective ways to ensure compatible development in the long term. This CAS is meant to be a living document, so certain strategies may need to be revisited as the local situation and applicable laws evolve. For more information on the Implementation Plan, see **Chapter 6**.



2

Community Overview

This chapter provides information on communities and jurisdictions surrounding Camp Williams most impacted by the Compatible Area Study (CAS). These communities include:

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain City
- Town of Cedar Fort



Regional Profile

Camp Williams is located in north central Utah situated south of Great Salt Lake, north of Utah Lake, and within the Wasatch Region Range in the eastern slopes of the West Traverse Mountains. Its cantonment area, or garrison, is strategically located in the eastern part of the installation on relatively flat terrain within the mountain pass between the East and West Traverse Range commonly known as the Point of the Mountain.

The Point of the Mountain is a critical, and highly constrained, north-south corridor for inter-regional transportation and utility infrastructure (water, power, and energy) and will continue to act as an important gateway in the region and state. This area is located between the East and West Traverse Mountains and between Great Salt Lake and Utah Lake and constrains development between the Salt Lake City metropolitan area and the Provo region. These unique conditions — at Point of the Mountain and contiguously Camp Williams — make this area critical for the passage of transportation, energy, and natural resources. These circumstances challenge both master planning at Camp Williams and military operations at the installation.

Point of the Mountain is a north-south corridor for intermodal transportation in the region and state. Motorized transportation uses I-15 and State Route (SR) 68 (aka Redwood Road or Camp Williams Road). The regional passenger rail system, FrontRunner, operates on Union Pacific rail lines just east of Camp Williams along the Jordan River. FrontRunner connects Ogden, north of Salt Lake City, to downtown Provo to the south, approximately 23 miles southeast of Camp Williams. Union Pacific's freight system operates throughout the western United States.

Energy is regionally and nationally transported through this corridor. A natural gas pipeline operated by Kern River Gas Transmission Company is located along a utility easement immediately west of the garrison within the maneuver training area of the camp. Additionally, four power transmission corridors cross the camp boundaries from north to south. They include two regional power transmission lines which cross the

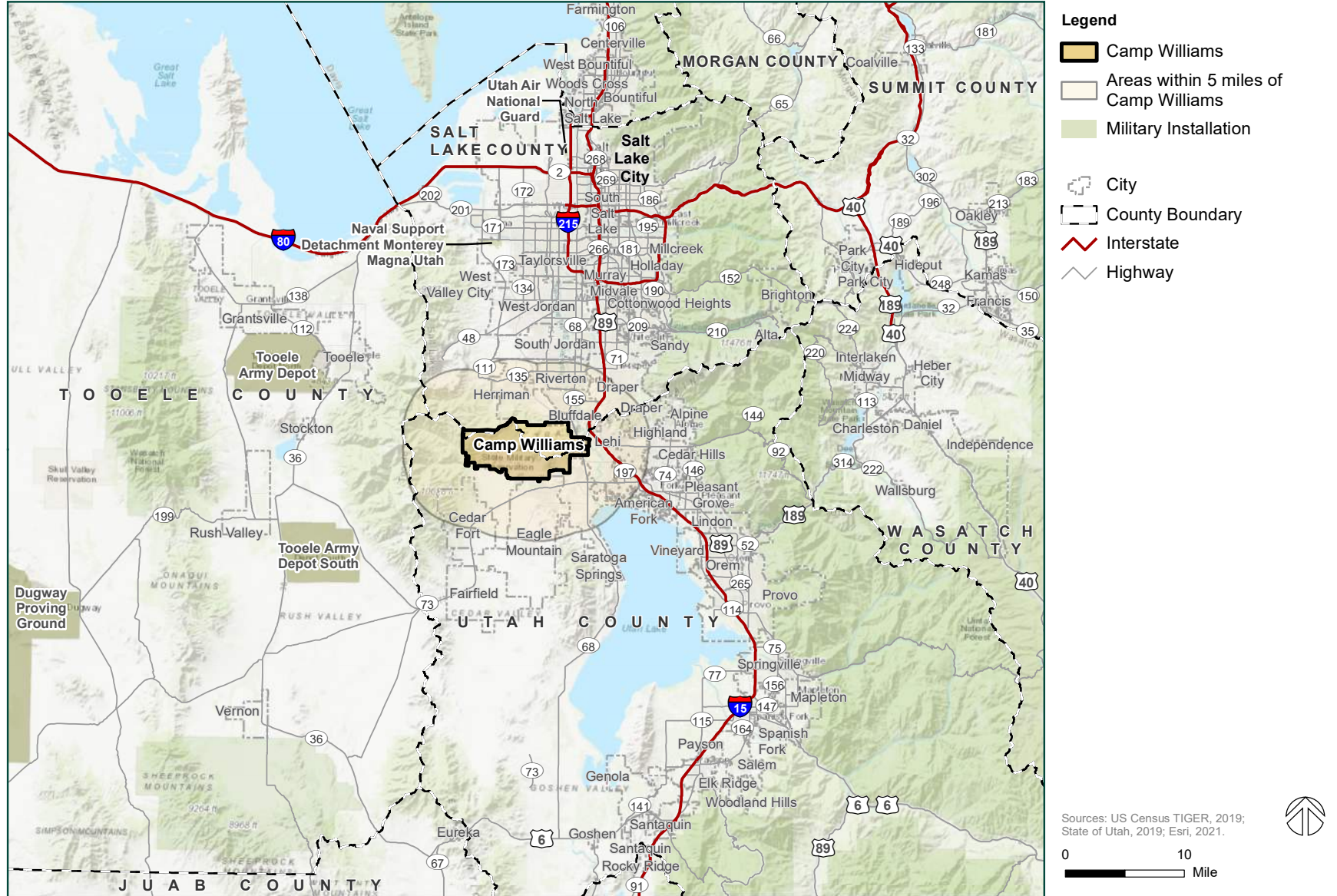
training area west of Redwood Road and to the west of the cantonment area with two additional local and regional power transmission lines that transect the garrison diagonally from northwest to southeast. All power transmission lines are operated by Pacific Corp.

Natural resources also flow through Point of the Mountain. This area includes the Jordan River, which flows northward from Utah Lake and empties into Great Salt Lake. Additionally, several water canals transect the cantonment area and the installation as a whole. This area also acts as a wildlife corridor for animals between the West and East Traverse Mountains.

Between 1980 and 2022, Salt Lake County doubled its population while the population of Utah County tripled. This growth in population and corresponding development has increased the importance of Camp Williams while creating new challenges for development and land use at the installation. Figure 2.1 underscores the change in development patterns between 1980 and 2020.

Camp Williams shares borders with several jurisdictions. They include Salt Lake and Utah Counties, Herriman City, Bluffdale City, Lehi City, Eagle Mountain, and the City of Sarasota Springs. Understanding current land use, zoning, and future development in these jurisdictions was an important part of developing the Master Plan. While the analysis of land use in these communities is not presented in this report, land use elements were heavily considered when developing the Master Plan.

Community Overview



: || i fY'&%West Traverse Mountain Compatibility Area Study Regional Area

Community Overview

The thriving and growing urban communities around Camp Williams include some of Utah's largest and fastest-growing cities. The Cities of Herriman, Bluffdale, Lehi, Eagle Mountain, and Sarasota Springs, as well as Salt Lake and Utah County, are critical partners in a collaborative effort with the Utah National Guard to sustain the base's current missions *and vital economic impact* while ensuring economic and development opportunities for the region.

As a caveat to identifying vital land use compatibility components, it is essential to capture and describe certain demographic characteristics of these communities to assert a baseline context from which informed decisions can be made when assessing compatibility strategies.

Information presented in this chapter includes current development, population, housing, economic trends, transportation, and shared resources within the Study Area. This information provides an “outside the fence line” context for compatibility challenges for Camp William and the surrounding community. It also demonstrates how economic growth and other compatibility factors may challenge the sustainment of Camp Williams’ missions.

The goal of the community profiles is to provide information that informs stakeholders of growth trends that have the potential to affect the future of Camp Williams, positively or negatively. The profile information is intended to be considered along with other factors to help public officials mitigate compatibility issues through coherent, informed planning policies and decisions which balance future development and economic growth with sustainment of the current mission set and future mission growth potential for Camp Williams.

Additionally, the community profiles inform Camp Williams’ leadership and installation facilities, engineering, and planning staff of the nature

of regional growth and urban development occurring “outside the fence line” when considering future missions and installation development.



Matrix Design Group, 2021.

2.1 CAS Partner Community Profiles

Salt Lake County



Year Incorporated
1850

Land Area
807 Square Miles

Form of Government
Council-Mayor

2020 Population
1,185,238

Major Industries

Wholesale and Retail Trade, Manufacturing, Transportation and Communications, Finance, Mining, Construction, Tourism, Agriculture

Salt Lake County is the largest county by population in the State of Utah. The county encompasses a total of 807 square miles. To the north, the county encompasses the Great Salt Lake, its namesake. The Jordan River traverses the county, running north from its headwaters in Utah Lake and emptying into the Great Salt Lake. Another large feature within the county is the Salt Lake Valley, a 500-square-mile valley that attracted initial settlers to the area in 1847. The county is bordered to the west by the Oquirrh Mountains and the Wasatch Range to the east. Salt Lake County shares its borders with Davis County to the north, Morgan County

to the northeast, Summit County to the east, Wasatch County to the southeast, Utah County to the south, and Tooele County to the west.

Northern portions of Camp Williams are within Salt Lake County boundaries to the south, with the remainder of the camp residing in Utah County to the south. Along the northern border are the cities of Herriman and Bluffdale, which are also Compatibility Area Study (CAS) partnership communities.

Three interstate highways and one U.S. highway traverse Salt Lake County. Also referred to as State Street, U.S. 89 nearly divides the state from north to south, enters Salt Lake County from Davis County in the north, and merges with I-15 in the City of Lehi. I-15 and I-80 intersect the county, west of Downtown Salt Lake City. Known as the Belt Route, I-215 is an auxiliary interstate that services much of the Salt Lake City area and is utilized as a bypass for I-15 and I-80.

Salt Lake City International Airport (SLC) operates under the jurisdiction of Salt Lake City, in the northern portion of the county. The airport resides just north of I-80 and west of I-215. In 2021 the airport serviced more than 22 million passengers.

The county is governed by an elected nine-person council and mayor. Divided into six districts, Camp Williams resides in District 5 of Salt Lake County. In addition to being the state capital, Salt Lake City also serves as the county seat. The county's regional planning agency is the Wasatch Front Regional Council (WFRC).

The draft Salt Lake County West General Plan recognizes Camp Williams and states that the City of Herriman worked in collaboration with Camp Williams to preserve open space and trails development near the installation. Furthermore, the plan recognizes Camp Williams' plans to establish a conservation buffer that will affect Bluffdale's western and southern borders. One of the plan's goals is to assist Camp Williams in the development of buffers to reduce the impacts of incompatible land uses. The general plan also has the goal of adopting dark sky standards by implementing a variety of light pollution reduction measures.

West Traverse Mountain Compatibility Area Study

Additionally, the plan recognizes the Camp Williams Army Compatible Use Buffer (ACUB) and guides appropriate land uses for the buffer easement priorities.

Utah County



Year Incorporated
1850

Land Area
2,142 Square Miles

**Form of
Government**
Board of
Commissioners

2020 Population
659,399

Major Industries
Steel Industry, Tech Industry, and Agriculture.

Utah County comprises a total area of 2,142 square miles, situated approximately 44 miles south of Salt Lake City. The county encompasses Utah Lake, which converges with the Jordan River to the north and the Provo River to the southeast. Within the county is Mount Nebo, the southernmost and highest mountain in the Wasatch Range.

Utah County shares its borders with Salt Lake County to the north, Wasatch and Toole County to the east, and the counties of Juab,

Sanpete, and Carbon to the south. Camp Williams is situated in the northern portion of the county, split between both Utah and Salt Lake County.

One interstate highway and three U.S. highways traverse Utah County. Continuing from Salt Lake County, I-15 runs north and south, just around Utah Lake and west of Provo. US-89, also known as State Street, demerges from I-15 north of Utah Lake and continues south parallel to I-15 through the county's major cities and towns, exiting the county through the Wasatch Range. US-189 spurs from US-89 in Provo and runs northeast toward Wyoming. US-6 traverses east to west through Spanish Fork from Wasatch County to Juab County.

Before the county's incorporation in 1850, Utah County was known as Utah Valley. Some of the first established settlements in the area include Provo, Lehi, Payson, and Springville. Approximately 30,000 settlers moved from Salt Lake County to Utah County when a large contingent of federal troops moved into the Salt Lake City area. The City of Provo remained the center of activity within the county, soon becoming home to Brigham Young University, which opened its doors in 1903.

Provo, the State of Utah's third-largest city, holds the county seat. The current Utah County General Plan has one goal, to cultivate a "pleasant and progressive county in which people can live and work, without sacrificing the traditional rural atmosphere."¹ Of the 16 objectives identified to accomplish this goal, one is to promote the viability of unique economic assets such as Camp Williams. Sub objectives identify partnership and educational opportunities to increase public dialogue and cooperative planning efforts with the camp.

¹

https://utahcounty.municipalcodeonline.com/book?type=plan#name=2_GOALS,_OBJECTIVES,_AND_POLICIES_ELEMENT

Herriman City



Year Incorporated
1999

Land Area
20.3 Square Miles

**Form of
Government**
Council-Manager

2020 Population
55,144

Major Industries

Retail Trade, Educational Services, and Food Services

Herriman City encompasses a total area of 20.3 square miles, situated in the southwest corner of Salt Lake County. The city is bordered by South Jordan City to the north, with Riverton and Bluffdale City to the east. Unincorporated portions of Utah County border Herriman to the west, with Camp Williams directly south of the city. A small portion of the city, approximately 3%, is overlapped by Camp Williams.

Also known as the Mountain View Corridor, SR-85 is the city's primary connection to the remainder of Utah and Salt Lake County, running north to south on the eastern portion of the city. Southbound, Herriman connects to Camp Williams via SR-85 until the corridor reaches Porter Rockwell Boulevard.

Originally known as the town of Butterfield, Herriman was founded by Thomas Butterfield, John Stocking, Robert Petty, and Henry Herriman, for whom the town was eventually named in 1858. The town was reclassified as a Herriman City in 2000 by state law as the population continued to

increase. Herriman City is governed by a five-member council that directs the city manager to carry out City functions.

The current draft Herriman City 2025 General Plan guides the general location of basic land uses and provides policies for how those uses should function. The plan aims to encourage community development and growth by focusing on three main elements:

- Land Use and Urban Design
- Demographics and Housing
- Economic Development

Camp Williams is recognized as District 8 in the general plan. One goal within the plan is to provide locations for businesses that support uses complementary to Camp Williams' mission. The plan also states the intent to cooperate with Camp Williams in the management of the camp's boundary by supporting compatible uses along the camp boundary. Furthermore, the plan discusses the 2012 Camp Williams Joint Land Use Study (JLUS) and states the city's intent to assess and determine actions for promoting compatibility between the camp and the city.

West Traverse Mountain Compatibility Area Study

Bluffdale City



Year Incorporated
1978

Land Area
11.2 Square Miles

**Form of
Government**
Council-Mayor

2020 Population
17,014

Major Industries

Construction, Wholesale Trade, Administration, and Support

Bluffdale began with a larger area than today when it encompassed parts of Riverton, Draper, and Herriman. Situated in the south end of Salt Lake County, Bluffdale was established in 1848 after being settled by Orrin Porter Rockwell. Bluffdale was incorporated as a city on October 13, 1978. Bluffdale was named after the bluffs and dales that make up its general geography.

Bluffdale encompasses a total area of 11.2 square miles and is a primary junction for transportation and utilities between Salt Lake and Utah County. It is home to open spaces, views of the Wasatch Range, and a significant stretch of the Jordan River. “Life Connected” is the motto for the City of Bluffdale — connecting the 15,000 residents, two counties, and active lifestyles.

I-15 runs north and south directly along the east border of Bluffdale. To the north is SR-154, which is also known as Bangerter Highway. The proximity to the interstate and the state route makes Bluffdale desirable for economic development opportunities.

Bluffdale is known as the heart of Silicon Slopes, which is a regional boom in tech industries extending along the Wasatch Front. Some of the major employers include DataBank and Workfront. As such, the city experienced a large amount of growth and continues to pursue economic development opportunities.

The Bluffdale City General Plan (2022) recognizes Camp Williams and has the goal of maintaining coordinated efforts with Camp Williams to support appropriate adjacent land uses such as noise buffers, access, and border management

Bluffdale's city council is the governing body, comprised of five council members and the mayor. Additionally, the council established the office of the city manager to carry out day-to-day responsibilities.

Lehi City



Year Incorporated
1852

Land Area
28.45
Square Miles

**Form of
Government**
Council-Mayor

2020 Population
75,907

Major Industries
Agriculture, Tech Industry

Encompassing an area of 28.45 square miles, Lehi is the northernmost community in Utah Valley. Located in Utah County, Lehi City sits just north of Utah Lake and shares a border with Saratoga Springs to the west. The city is connected through I-15, which runs northwest to southeast through the city. SR-194 in north Lehi connects I-15 to SR-68 in the west.

Mormon pioneers initially settled in the city. Since the settlement, Lehi held several names, Sulphur Springs, Dry Creek, and Evansville, before being dubbed its final name.

Lehi is the sixth oldest city in Utah, embedded with a history of the old west. Famous routes and trails used by the Pony Express and Overland Stagecoach passed through or near Lehi. Since its settlement, the Lehi economy was based on agriculture and livestock. In 1890 the first Utah Sugar Company was established in Lehi, leading to the sugar beet becoming a significant cash crop for the city until World War I.

The city has experienced a population growth of 73% in the last two decades and is the fifth fastest growing city in the country. This increase has been attributed to the draw of the information technology industry to the city due to lower employment costs compared to other regions. Companies such as eBay, SanDisk, and Adobe Systems that have set up in Lehi.

Lehi's government is comprised of a six-member governing council consisting of the mayor and five city council members responsible for policy making with legislative authority. Each council member is elected at large to serve four-year, staggered terms.

The Lehi General Plan Land Use Element highlights the importance of coordinating with Camp Williams to ensure development compatibility by using the previous JLUS as a guide for development types located near the camp. Lehi is also home to Camp Williams Military Academy, which is one of two high school military academies in the Wasatch Front.

City of Saratoga Springs



Year Incorporated
1997

Land Area
23.22 Square Miles

**Form of
Government**
City Manager by
Ordinance

2020 Population
37,696

Major Industries

Retail Trade, Manufacturing, Construction, Finance, and Insurance

after discovering hot springs near the mouth of the Jordan River, resulting in the building of a popular resort in 1884. The owner named the resort after the original Saratoga Springs resort in New York State. The city came to fruition by a group of local landowners seeking to develop the lakeside and foothill properties with subdivisions. Since its incorporation, the City of Saratoga Springs has become one of the fastest-growing cities in the United States.

Like Bluffdale, the Saratoga Springs city council is the governing body, comprised of five council members and the mayor. The form of government adopted by the city is a city manager by ordinance, which means day-to-day operations are carried out by a full-time city manager.

Currently, Saratoga Springs does not recognize Camp Williams or compatible development with Camp Williams.

Saratoga Springs encompasses a total of 23.22 square miles. The majority of the city's southern boundary is situated along Utah Lake's northwestern shores. The city also shares a border with Lehi City to the east and Eagle Mountain to the west. A portion of the city's northern border abuts Camp Williams' southeast boundary.

The City of Saratoga Springs is a newer city, having been incorporated in 1997 and officially becoming a city in 2001. The area was first developed

Eagle Mountain



Year Incorporated
1996

Land Area
50.43 Square Miles

**Form of
Government**
Council-Mayor

2020 Population
43,623

Major Industries
Retail Trade, Service Industry

Eagle Mountain is a young town that has experienced significant growth in recent years. Located in Utah County, Eagle Mountain has rapidly become the largest city by land space in the county. Eagle Mountain shares its northern boundary with Camp Williams and a portion of the northeastern boundary with Cedar Fort. For many years, Eagle Mountain was removed from the growth in the region. The town was situated alongside the Pony Express trail in the 1860s but only had a population of 250 when it was incorporated in 1996, which grew rapidly after the city's incorporation to 43,000 in just 20 years.

Eagle Mountain only has one state route and two major roadways. SR-73 cuts across the northernmost portion of the city going east and west. The Eagle Mountain Boulevard and Pony Express Parkway provide residents with north-south roadway access. Eagle Mountain Boulevard runs from SR-73 on the west side of the city, while the Pony Express Parkway begins at SR-68 and ends near the Facebook Data Center Warehouse in the southern portion of the city.

Currently, Eagle Mountain is a bedroom community with most residents commuting to other areas to work. The City is in the middle of executing economic development plans to attract new business by developing industrial parks and corporate centers.

The City's general plan focuses are three-fold:

- Balancing economic development with the preservation of open space
- Maintaining the character of Eagle Mountain through growth and changes in the city
- Establishing financially responsible developments

Eagle Mountain City has a six-member council form of government comprised of the mayor and five council members. The Eagle Mountain city mayor is the chief executive officer of the City and administers the overall budget.

The 2018 Eagle Mountain General Plan recognizes the Camp Williams Military Compatibility Area Overlay District (MCAOD), which was established as part of the prior JLUS. The plan also emphasizes the importance of coordination and consideration regarding land use decisions that may impact, or could be impacted, by Camp Williams operations.

Town of Cedar Fort



Year Incorporated
1852

Land Area
21.2
Square Miles

**Form of
Government**
Council-Mayor

2020 Population
393

Major Industries
Agriculture

The Cedar Fort 2020 to 2025 General Plan lays out goals and policies aimed at growing the town while keeping the small-town atmosphere. The town does not share a border with Camp Williams but is in close proximity. As such, Camp Williams helicopters are frequently observed flying over the town.

Named after the juniper “cedar” trees, the Town of Cedar Fort encompasses an area of 21.2 square miles. Much of Cedar Fort property includes the Cedar Valley to the east, which borders the Cedar Mountains and the Markagunt Plateau. The town shares its southern border with the city of Eagle Mountain but is otherwise surrounded by unincorporated Utah County. Albert Bell was the first settler to Cedar Valley in 1852, shortly followed by a few families sent to the town by Brigham Young. Due to the Walker War and several other incidents, settlers were forced to leave the town from 1854 to 1858. The town changed its name to Cedar Fort shortly after, when a stone wall to protect the settlers began construction. Cedar Fort was incorporated as a town in 1965.

SR-73 is currently the only main connector from Cedar Fort to the rest of Utah County, entering from the east of the town and continuing south to Fairfield.

2.2 Community Growth Trends

Populations Trends and Forecasting

Population trends outline the regional context for projecting growth and development in the project area. These trends can help highlight areas of potential future compatibility issues between Camp Williams and surrounding communities. Identifying where the population is clustered or where it is most dense is also essential for planning future growth and development.

Table 2.1 shows the change in population density between 2010 and 2020. The communities within the Study Area indicate an increase in population, averaging a 75% growth combined. Apart from Cedar Fort and Salt Lake County, each community in the Study Area surpasses the State of Utah's population growth. Herriman City shows the most significant growth over the last ten years, with over 30,000 additional residents since the census of 2010. Utah County, with a population of 516,564 in 2010, is the second-most populous county in the state. In 2020 Salt Lake County showed a 15% increase in the population over the last nine years, 3% short of the state's growth.

The population in Herriman City grew from 1,523 residents according to the 2000 census to 21,785 by the year 2010. This increase in population resulted from nearly 4,000 acres of land being annexed to Herriman City from neighboring Bluffdale City. In 2020, the city's population was just over 55,000 residents, suggesting the annexation encouraged a drastic increase in population.

Since its incorporation in 1996, Eagle Mountain has grown rapidly in land size and population. The population has grown from 250 to 43,000 in just over 20 years. Saratoga Springs also experienced a drastic increase in population since its incorporation just one year after Eagle Mountain. This increased growth may be attributed to the city's desirable location near Utah Lake and its proximity to the Silicon Slopes area.

Table 2.1 Change in Population Density between 2010 and 2020

Location	2010	2020	Change	% Change
State of Utah	2,763,885	3,271,616	507,731	18.3%
Utah County	516,564	659,399	142,835	27%
Salt Lake County	1,029,655	1,185,238	155,583	15%
Herriman City	21,785	55,144	33,359	153%
Bluffdale City	7,598	17,014	9,416	124%
Lehi City	47,407	75,907	28,500	60%
City of Saratoga Springs	17,781	37,696	19,915	112%
Eagle Mountain City	21,415	43,623	22,208	104%
Town Cedar Fort	368	393	25	6%

Source: U.S. Census Bureau

Future Population Projections

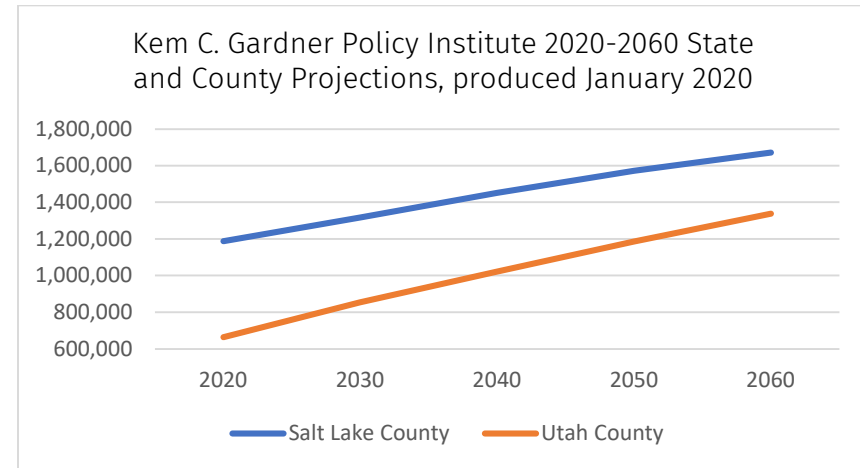
Population projections can shed light on potential growth in a geographical area and are based on the overall observed trends occurring in an area. Although estimates at best, these projections can be a tool to assist communities in planning and managing growth and development efforts. Table 2.2 illustrates projected growth within the CAS Study Area in Utah and Salt Lake County, indicating continued and progressive growth between this decade and 2060.

Utah County's population will remain the second highest of all counties through the year 2060 according to the Kem C. Gardner Policy Institute, 2020-2060 Projections. Though Salt Lake County is estimated to remain the highest populated county in the state, Utah County is projected to be the fourth fastest growing county in the state² with an expected increase of over 670,000 by 2060.

The population projections greatly correlate with the continued economic growth in the Silicon Slopes, a term used to describe the technology industry boom, spanning from Salt Lake City in the north to Provo in the south. A visual of the population projections in the Study Area is depicted in Table 2.2.

When population density is evaluated per square mile, higher densities indicate areas where most of a population lives. Changes in densities can show where people are moving to and from, with increases suggesting an influx of new residents, as well as new housing, infrastructure, and public services to support increased demands. A comparison of population density in the Study Area in 2010 and 2020 and population projections (Table 2.1 and 2.2, respectively) shows growth trending.

Table 2.2 Population Projections by County



Housing Trends

Housing trends typically coincide with population growth and as such, can indicate economic activity and vitality in an area. Rapid housing growth or slow-growing areas may reveal population increases or declines in a community or neighborhood.

Housing Units

The rate of housing development is a strong indicator of the overall rate of development taking place in a region, which may result in land uses potentially incompatible with operations at Camp Williams. In slower-growing areas, housing data may reveal development stagnation and out-migration.

² <https://gardner.utah.edu/wp-content/uploads/LongTermProj-Jan2022.pdf?x71849>

Table 2.3 Housing Stock Trends

Jurisdiction	2010 (Units)	2020 (Units)	Percent Increase
Utah County	148,350	192,570	29.8%
Salt Lake County	364,301	428,279	17.7%
Herriman City	6,022	16,276	170.3%
Bluffdale City	2,059	4,947	140.3%
Lehi City	13,064	20,994	60.7%
City of Saratoga Springs	4,685	9,531	103.4%
Eagle Mountain City	5,546	10,539	90.0%
Town of Cedar Fort	138	148	7.2%
Total	544,165	683,284	79.6%

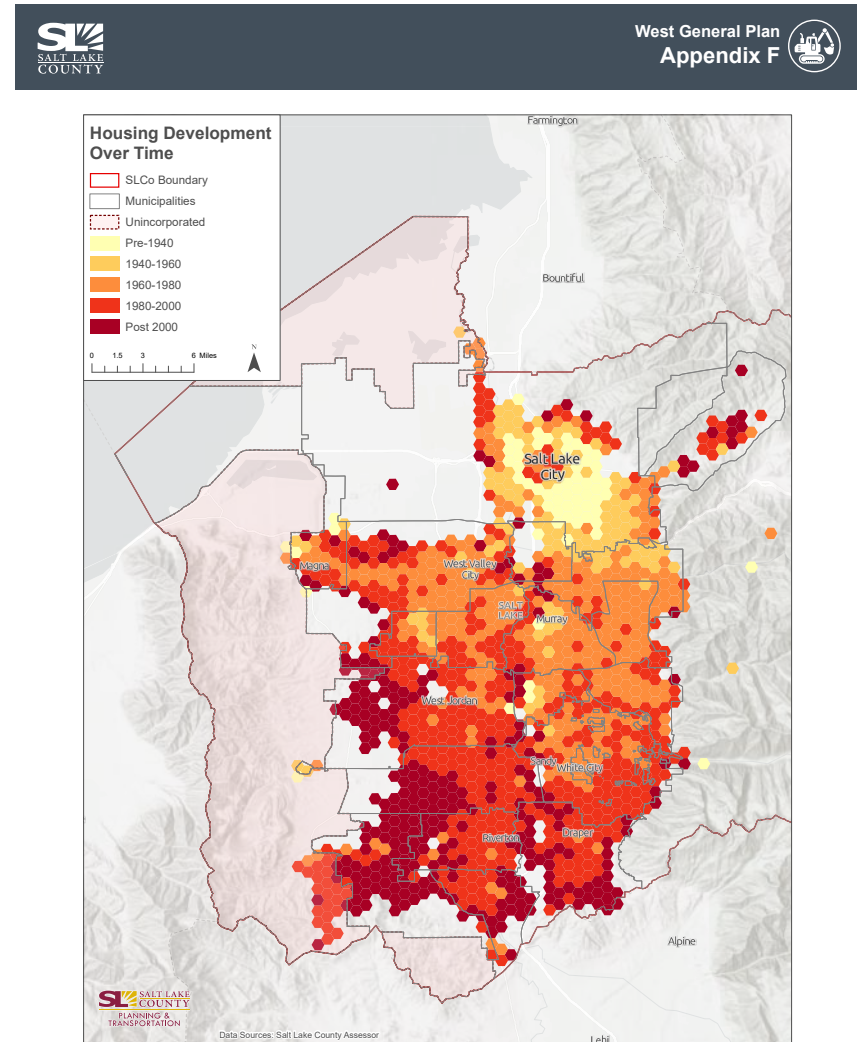
Source: U.S. Census Bureau

Table 2.3 shows that between 2010 and 2020, there was a nearly 80% increase in housing units throughout the Study Area. Of the housing units in the Study Area, over 96% were occupied and approximately 4% were vacant. Additionally, the majority of the occupied housing units (approximately 79.8%) were owner-occupied and approximately 20.2% were renter occupied.

2.3 Development Trends

Since the 2012 JLUS, there has been significant development within the Study Area as regional population, employment and housing growth estimates suggest will continue. Development has been rapid in the neighboring communities of Herriman, Bluffdale, Saratoga Springs, and Eagle Mountain. More people are living and working near Camp Williams—over 100,000 people in the last decade (see Table 2.1). A clear example of this growth is shown in Figure 2.2.

Figure 2.2 Housing Development Over Time Salt Lake County



West General Plan, Salt Lake County, 2022

Economic Development Trends and Growth Potential

Economic trends can help identify growth potential for the project area and how some of that growth may relate to Camp Williams. Economic trends include projected jobs in the area, median household income, the population currently in the labor force, and the top industries in the project area.

The Kem C. Gardner Policy Institute identifies six major economic regions, with the entire Study Area residing in the Greater Salt Lake region. The Greater Salt Lake region offers a tremendous opportunity to individuals and businesses. People are drawn to the area for its natural beauty, climate, and tech-driven regional economy. The region's attraction of high skilled workers, modern infrastructure capable of supporting continued growth and expansion, and the significant amounts of undeveloped and underdeveloped land, will allow more housing and large corporate centers to be built.

Between 2020 and 2060, Salt Lake and Utah County are anticipating a total job growth of approximately 892,000. Further supporting the Silicon Slopes area, both counties combined account for over 75% of the state's total projected professional, scientific, and technical service industry employment growth. Job forecasts through 2050 are depicted in Figure 2.4.

Camp Williams not only provides essential training opportunities for the Utah National Guard, it also has a significant impact on the local and state economy. Camp Williams contributes to the overall regional economy through employment, indirect spending, and development on base.

Regional Growth Forecasting

The Wasatch Front Regional Council (WFRC) develops socioeconomic estimates and growth projections including population, households, and

employment for cities and transportation analysis zones in the region through enhanced forecasting methods. These estimates and projections provide the analytical foundations for regional transportation planning and other programs.

The WFRC has developed and adopted the long-range Regional Transportation Plan (RTP) and the short-range Transportation Improvement Program (TIP) for roadway, transit, and other projects. The RTP is updated every four years and the TIP is updated annually.

As part of the RTP and TIP updates, and along with other studies, WFRC develops or uses large amounts of data, including estimated future traffic volumes, estimated future transit ridership, and possible land use patterns.

West Traverse Mountain Compatibility Area Study

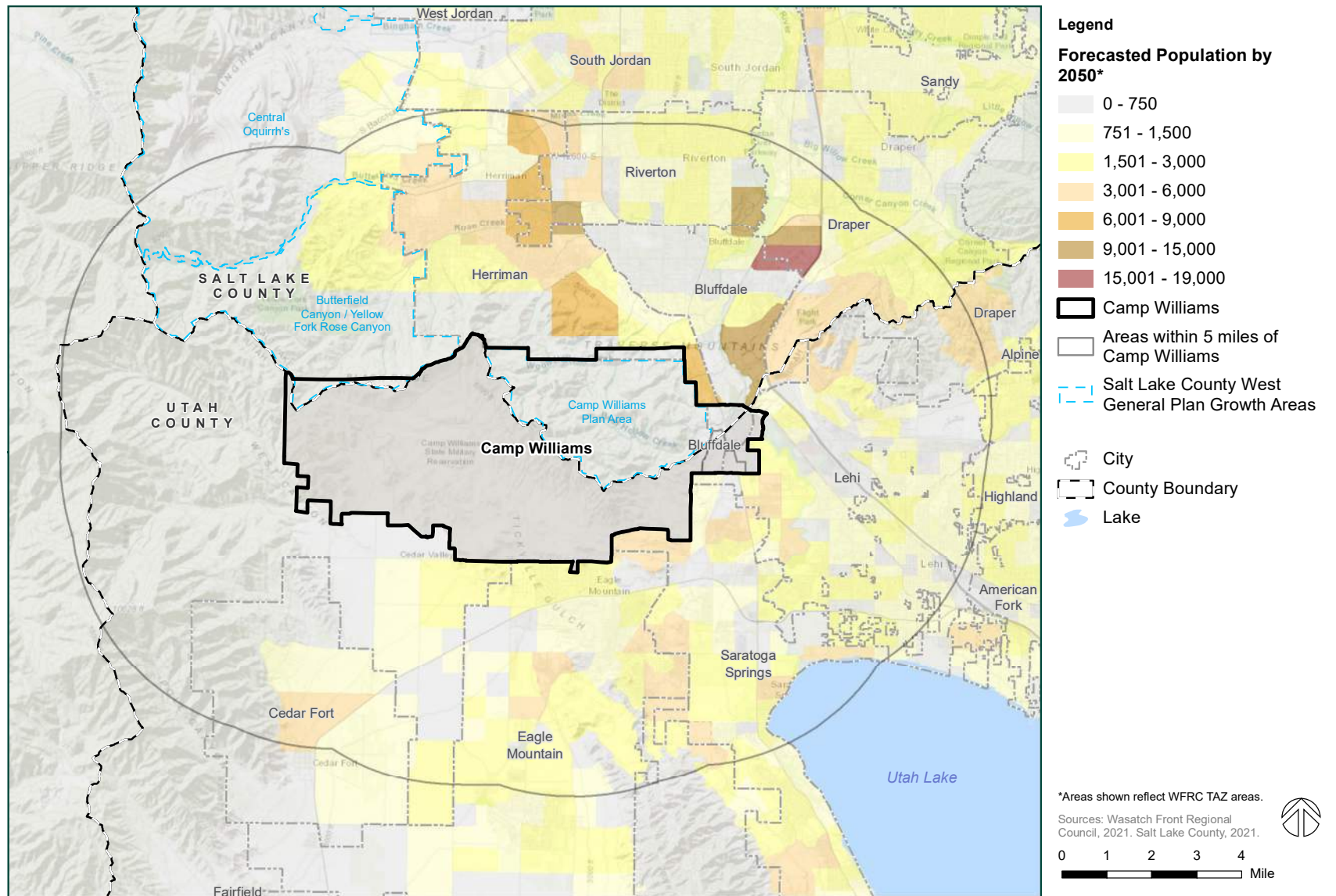


Matrix Design Group, 2021.

Population Forecast

The population forecast by 2050 is shown in Figure 2.3 using the Wasatch Front Regional Council (WFRC) Traffic Analysis Zone (TAZ) data described above. The raw number population projection for each TAZ is geographically displayed on this choropleth map using numeric breaks as displayed in the map legend. This map demonstrates projected increased population densification within the Study Area over the next 28 years. As indicated by the darker colors some areas are projected to grow to between 9,000 to 19,000 people for a multitude of TAZs in the vicinity of Camp Williams.

Community Overview



Source: WFRC 2021

West Traverse Mountain Compatibility Area Study

:] i fY'&" 'Forecasted Population by 2050

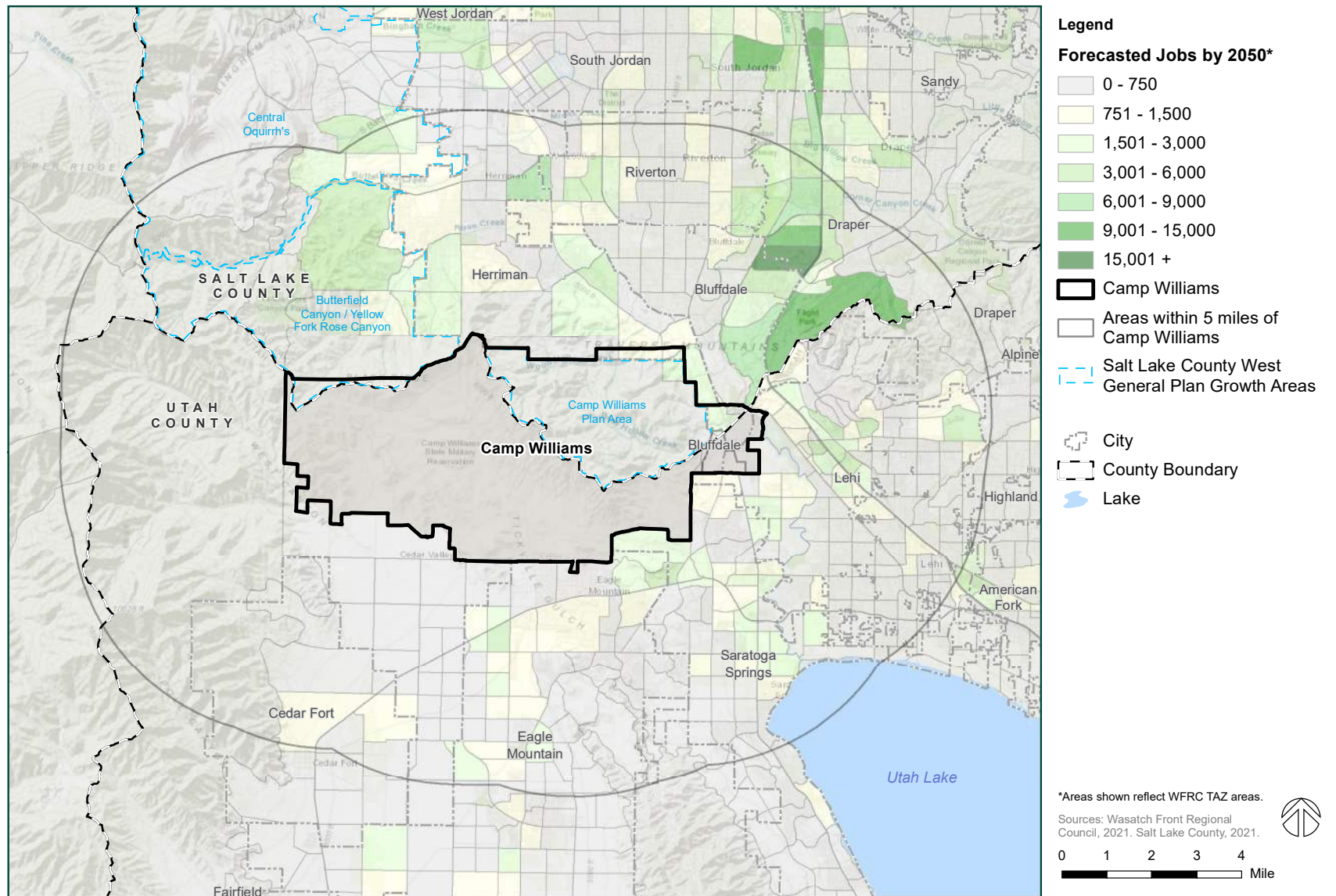


West Traverse Mountain Compatibility Area Study

Employment Forecast

The employment forecast by 2050 is shown in Figure 2.4 using the WFRC TAZ data described above. The total employment projection for each TAZ is geographically displayed on this choropleth map using numeric breaks as displayed in the map legend. This map demonstrates projected increased employment within the Study Area over the next 28 years. As indicated by the darker colors some areas are projected to grow to more than 9,000 to as high as 15,000 jobs for a multitude of TAZs in the vicinity of Camp Williams.

Community Overview



Source: WFRC 2021

West Traverse Mountain Compatibility Area Study

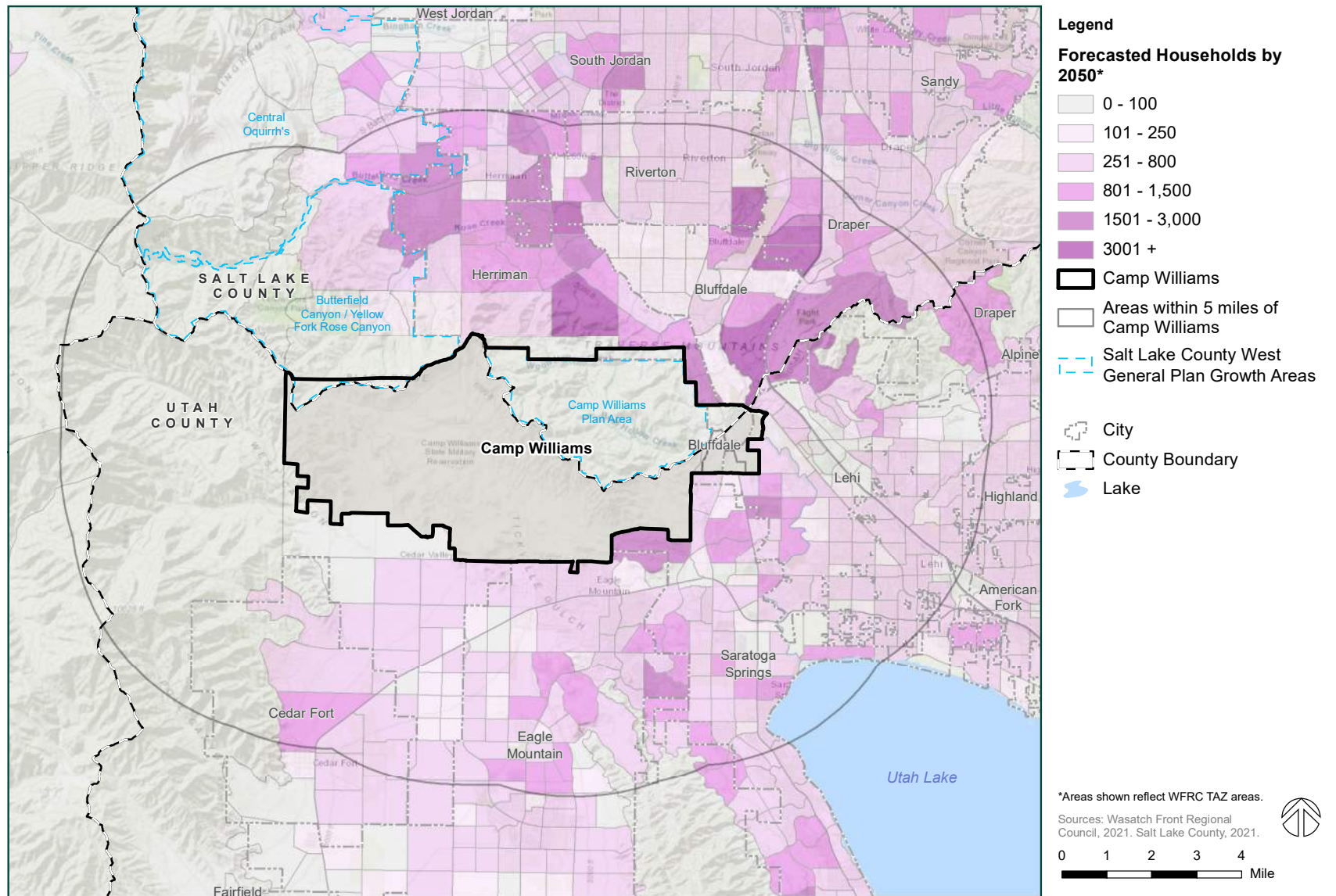
:][i fY'&'(Forecasted Jobs by 2050



Forecasted Housing Growth

The housing forecast by 2050 is shown in Figure 2.5 using the WFRC TAZ data described above. The raw number of forecasted households for each TAZ is geographically displayed on this choropleth map using numeric breaks as displayed in the map legend. This map demonstrates projected household densification by TAZ within the Study Area over the next 28 years. As indicated by the darker shades some areas are projected to grow to more than 3,000 households for a multitude of TAZs in the vicinity of Camp Williams.

Community Overview



Source: WFRC 2021

West Traverse Mountain Compatibility Area Study

: [i fY'&) 'Forecasted Households by 2050



Growth Near Camp Williams

Metropolitan urban growth of the vicinity around Camp Williams to the north, east and south of its cantonment area has accelerated in the last decade bringing development pressure up to its fence line.

While residential development is currently limited to large lot and low density in Herriman, and most of Bluffdale, Eagle Mountain and Saratoga Springs are proposing low to medium-density residential along the southern boundary of the camp. Lehi has a considerable amount of land zoned to promote development adjacent to Camp Williams east of Highway 68. Holbrook Farms is an active commercial/mixed-use, medium-density residential development project underway just south of the camp's cantonment area along 2700 North. Areas west of Highway 68 are currently undeveloped but are likely to develop in the near term.

Other active development is present in Saratoga Springs immediately adjacent to the southeast corner of the Camp Williams training area boundary, just west of Highway 68, which is zoned for high-density residential up to 14 dwelling units per acre.

Development pressure and the extension of the Mountain View Corridor north to south across Camp Williams influences on-base real property master planning and future development of the camp cantonment area. External development and urban growth are not generally considered during the development of military installation real property master plans; however, these must be considered as factors for the Camp Williams Master Plan. Specifically, the influence of development through or adjacent to its critical facilities including:

- Mountain View Corridor (direct implications on helipads, training area access, future land use, etc.); and
- The development along 2700 North (influences South Gate).

2.4 Regional Transportation Network

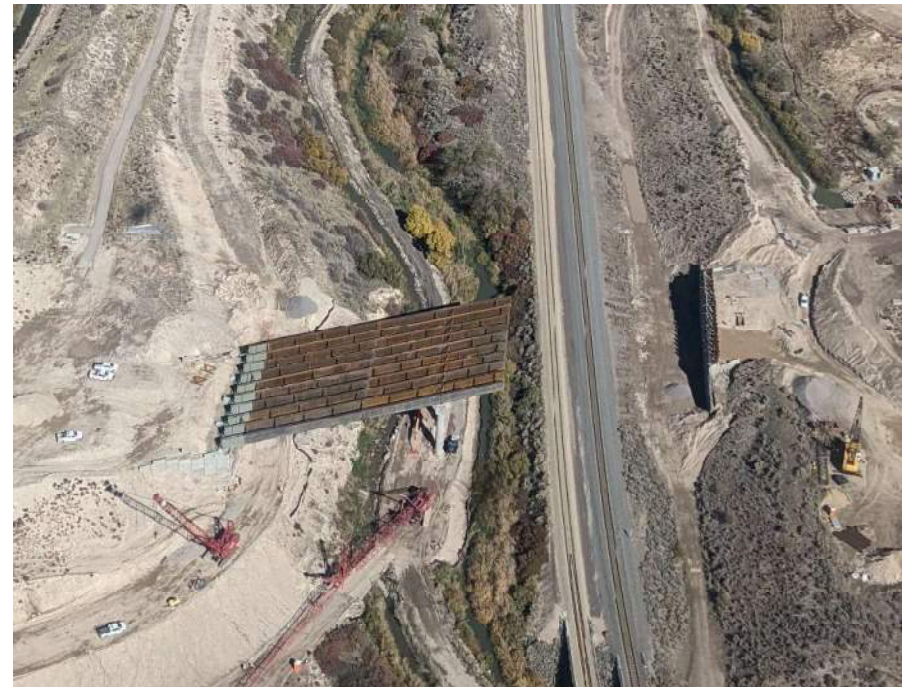
Camp Williams is located at the Point of the Mountain and is served directly by SR-68 and indirectly by I-15. Local county and city roads complete the road network in the Study Area. There is also a FrontRunner commuter rail station in Lehi, an approximate 5-mile drive from Camp Williams. The FrontRunner commuter rail system serves the area from Ogden to the north to Provo to the south.

SR-68 is one of two roads that connect Utah and Salt Lake Counties through a bottleneck of the Point of the Mountain. The low-lying area through this neck is occupied by the former Denver and Rio Grande Western Railroad. SR-68 is routed on the western slope of the canyon, with direct access to Camp Williams. The other highway, I-15/US-89, is routed higher up Point of the Mountain with two exit ramps within proximity to the Study Area, one to the northeast and another directly east. Direct access to I-15 from Camp Williams is not possible due to the Jordan River separating the two.

The Study Area has some of the most challenging transportation issues in the region. There are multiple choke points impacting both north/south and east/west regional traffic. This, coupled with high residential and commercial growth and being the center point of two metropolitan areas converging, only adds to the problem. The Point of the Mountain Choke Point is the narrow strip of land between Salt Lake and Utah counties. In the future, this area will have more traffic, and more people traverse it than any other area in the region. As shown in Figure 2.6, future proposed projects include extension of the Mountain View Corridor (MVC), improvements to I-15, and enhancements to light rail including the addition of FrontRunner commuter rail stations near Camp Williams.

Two major transportation plans address needs on a regional level. These plans are the WFRC *Regional Transportation Plan* (2019-2050) and

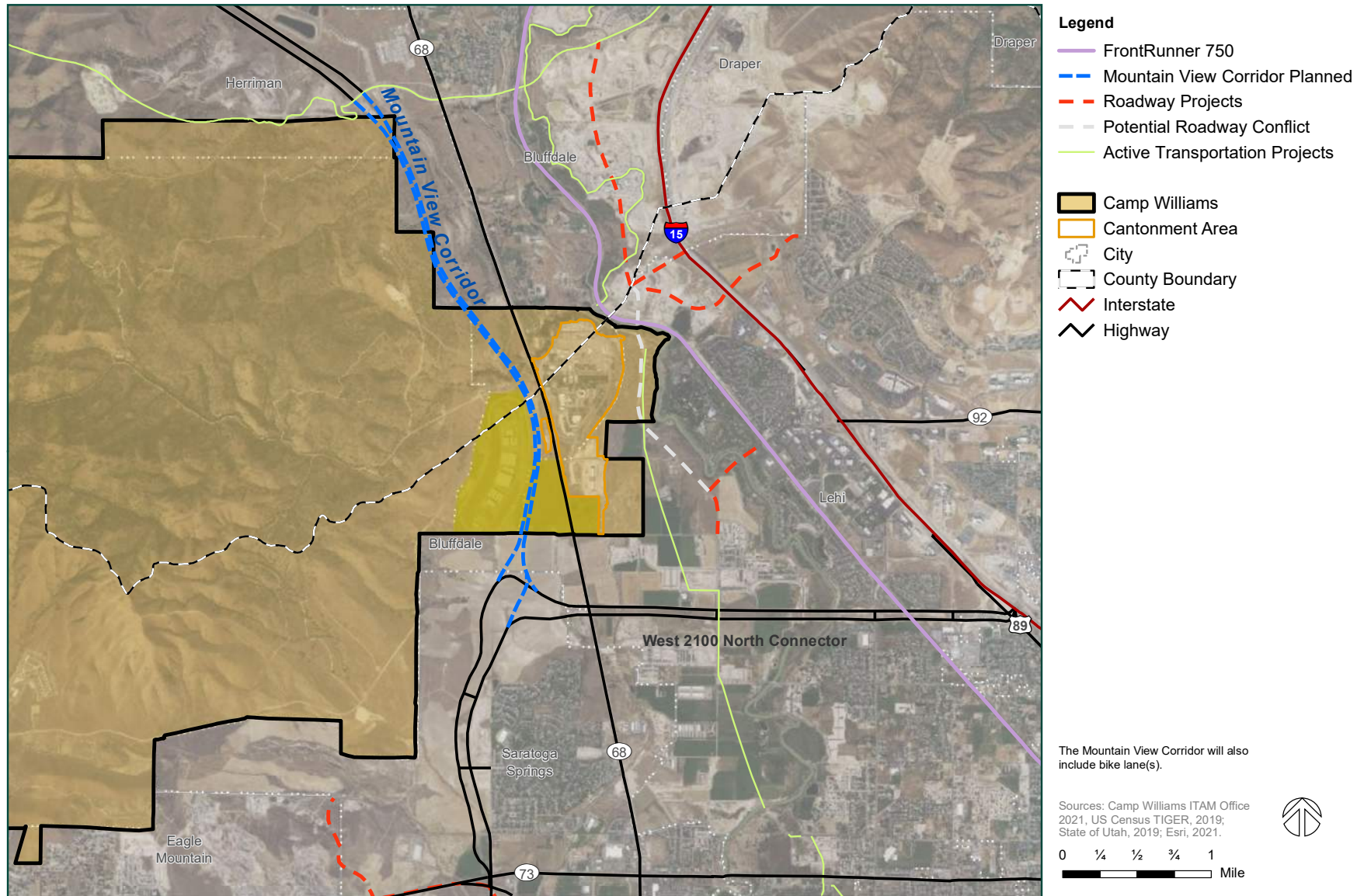
the *MAG TransPlan 50*. In both plans, there are shared goals of ensuring regional updates to the existing transportation network, increased capacity to freeways, and a regionally connected active transportation system. Described in the community profiles section of this chapter, many of the Study Area communities have less than three connections in or out of a given jurisdiction. Projects identified in the WFRC plan are more closely focused on the increased regional connection of active transportation systems such as light rails, express busses, and street cars.



Mountain View Corridor bridge construction, (Matrix Design Group, 2021)



West Traverse Mountain Compatibility Area Study



In 2021, WFRC completed the Southwest Salt Lake County Transportation Analysis and Solutions Development. The study published the preferred transportation scenario to address existing and future mobility issues in southwest Salt Lake County. The study looked at transportation infrastructure and strategies that will improve connectivity, travel times, and transit options. Identifying solutions that will improve east/west mobility in southwest Salt Lake Valley was a top priority. The recommendations in the preferred scenario build upon the RTP and include more multimodal projects. These project recommendations will be considered for adoption into the existing RTP or evaluated for inclusion into the next RTP update in 2023.

The *MAG TransPlan 50* recognizes the projected population and development, as described earlier, that will occur in the region by 2050 and affect the area around Camp Williams. As such, the plan has large projects to address the projected transportation needs in the region.

Figure 2.6 shows the major planned transportation projects around Camp Williams. The MVC, a freeway, will cross Camp Williams from its existing roadway at Porter Rockwell Boulevard in Herriman just north of Camp Williams. When completed, the MVC will connect with West 2100 North south of the camp, in the City of Saratoga Springs. This project is funded and currently underway.

Additionally, other roadway projects, such as local east-west connectors northeast of Camp Williams are envisioned. One proposed concept proposes to cross Camp Williams' cantonment area from north to south.

Further analysis of the potential impacts of these projects on Camp Williams is located in **Chapter 5**.

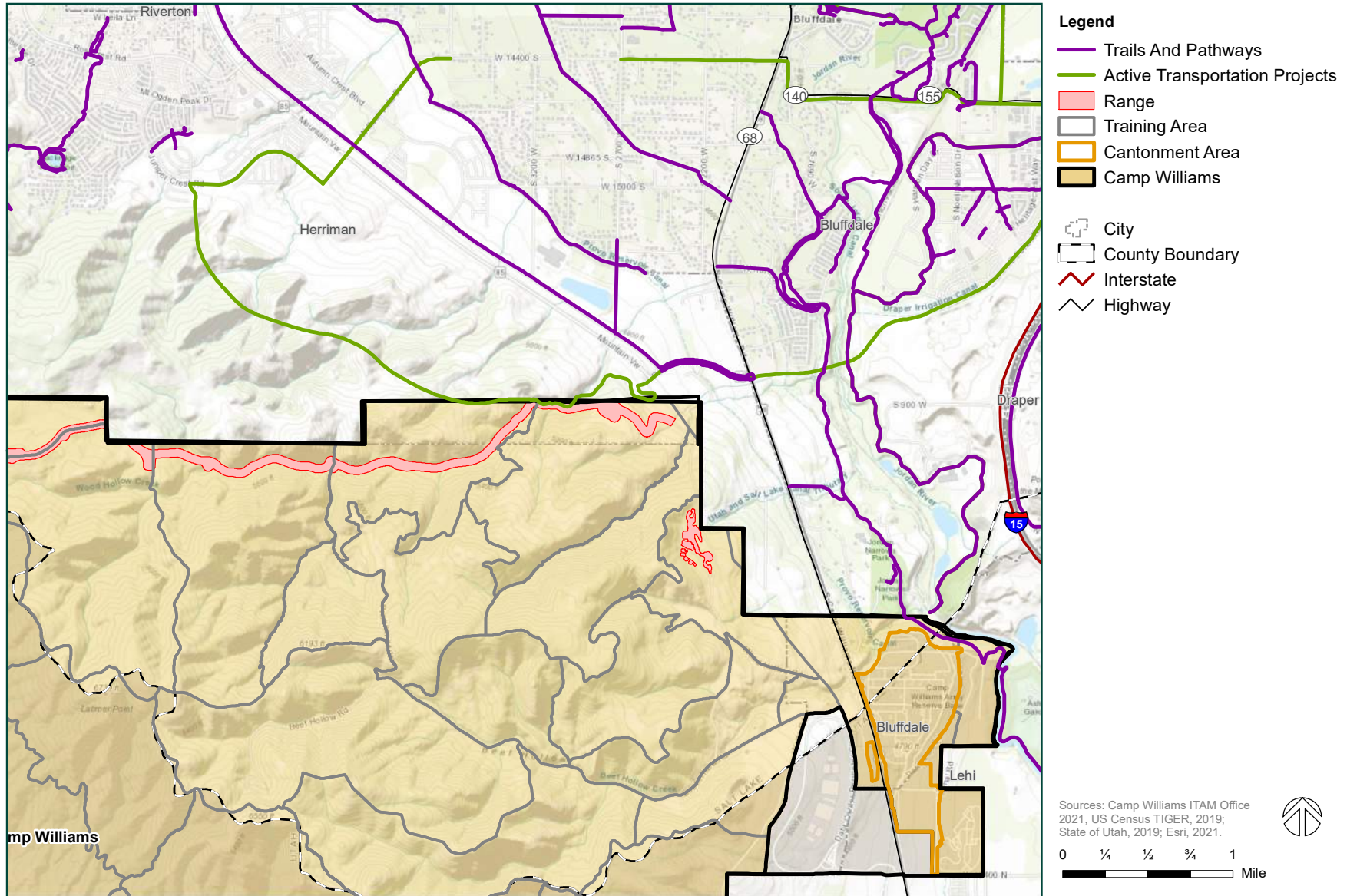
Active Transportation and Recreation Trails Near Camp Williams

According to the Salt Lake County West General Plan, in 2016, Camp Williams received help from the Conservation Fund to organize and conserve buffer land identified in the 2011 Joint Land Use Study and the 2015 Army Compatible Use Buffer. The purpose of the conservation effort is to provide a buffer between incompatible uses such as an active army training base and residential. The conservation area buffer will not be an expansion of the base but will be used as wildlife habitats and for limited recreation activities. It is anticipated that there will be trails in the buffer area for hiking, biking, and running. The trails in the buffer area should be planned and built to connect to trails in nearby municipalities and unincorporated areas. The buffer area trails should connect to the West Bonneville Shoreline Trail.

The West Bonneville Shoreline Trail should be the main spine of the trail systems. Other corridors should be considered when mine closures occur. Much of the Oquirrh Mountain range, northwest of Camp Williams, is owned by a single landowner, Rio Tinto Kennecott (RTK). Due to mining operations and public safety, the central and northern parts of the Oquirrhus have limited recreation opportunities. The RTK lands are private and are not accessible by the public. Current plans and trail opportunities in Yellow Fork and Rose Canyons to include nearby Butterfield Canyon, Bureau of Land Management (BLM) lands, and areas buffering Camp Williams should be expanded until mining operations have ended. The county should collaborate with Camp Williams in the Traverse Mountains for trail planning and recreational opportunities in the buffer area surrounding the military base and connectivity to commuter rail from the Jordan River Trail used by base personnel. Trails should include a comprehensive wayfinding system, including signs. Figure 2.7 shows the active transportation network in and around Camp Williams.



West Traverse Mountain Compatibility Area Study



Matrix

: || i fY'&" + Northeast Area Ranges, Training Areas, and Trails

2.5 Natural Resources

The West Traverse Mountain area is located on the eastern edge of the Great Basin. The Great Basin is bounded by the Wasatch Mountains on the east, and one of its characteristics is that all waterways drain internally with no outlets leading to the ocean. Camp Williams and nearby communities are situated in the west Traverse Mountains.

The region is considered semi-arid averaging between 10-20 inches of precipitation annually, depending on the elevation. Temperatures at lower elevations range from lows near zero degrees Fahrenheit in the winter to highs of 100 degrees Fahrenheit in the summer. Water resources include springs fed by underground systems and various ephemeral creeks that flow from higher elevations as well as surface waterways such as the Jordan River and the Utah Lake to the south. There are also manmade water canals in the area.

General vegetation types in the region include grasslands, shrublands, and forested woodlands. The potential for invasive species is an issue wherever land has been heavily disturbed both on the installation and in the surrounding jurisdictions. Camp Williams and the surrounding region have various plants and animals including some federal species of interest and state species of concern.

The Oquirrh Mountains, located northwest of Camp Williams, is home to one the largest open-pit copper mines in the world. Owned and operated by RTK, the Bingham Canyon Mine has been in production since 1906 and has produced more copper than any other mine in the United States.

Due to the scale of this mining operation, RTK is considered by some to be the most significant private economic driver in Utah. According to RTK's website, the company employed 2,066 in 2019, provided an economic contribution of \$1.6 billion, paid \$70 million in taxes and royalties, and invested \$2.7 million in the community. Thousands more are employed as subcontractors.

In a December 2019 press release, RTK announced plans to invest \$1.5 billion into the mine, which will allow it to continue operating through the year 2032. RTK anticipates continuing operations beyond 2032.

The Rose Canyon and Yellow Fork Canyon recreation areas are becoming increasingly popular with outdoor enthusiasts. Located in the southern Oquirrh Mountains, and bordering Camp Williams to the north, this recreation area is just south of the Bingham Canyon Mine. Currently, most of the trail opportunities are in Yellow Fork and Rose Canyons. It is anticipated that new trails will be available in Butterfield Canyon on the RTK and BLM properties through agreements.

Due to mining operations and public safety, the RTK lands are private and are not accessible by the public. According to the Salt Lake Counties West General Plan, one of the major goals for the west side of Salt Lake County is to plan and build the west Bonneville Shoreline Trail (BST). The West BST is a major backbone system to connect the entire foothills of the Oquirrhrs via a trail system. Some parts of the West BST could be built in the near term, while other parts will have to wait for post-mine closure and approval from RTK.

2.6 Existing Land Use

Existing Land Uses

The land uses throughout the Study Area remain similar in nature due to the ACUB and Sentinel Landscapes efforts around Camp Williams. With these designations, many of the communities in the Study Area have open space, recreational, or agricultural land uses. Other existing land uses near the camp, within the Study Area are residential single-family or multifamily neighborhoods, which are located primarily in Herriman City, Bluffdale City, and the City of Saratoga Springs. Several residential uses in Eagle Mountain reside close to Camp Williams' southern border, just north of SR-73.

Along the eastern border of Camp Williams, following SR-68 (Camp Williams Boulevard) are some existing land uses that are light industrial/business park, mixed-use, or commercial in nature. Existing zoning districts within the Study Area are depicted in Figure 2.8 and Figure 2.9.

Existing land uses surrounding the Study Area are consistent with local zoning. In the following section, zoning for each of the surrounding jurisdictions is described in relation to Camp Williams.

2.7 Zoning

Zoning districts regulate how parcels of land within each jurisdiction of the Study Area may be developed and used. Generally, the zoning of property aligns with the future land use maps from each jurisdiction.

Figures 2.8 and 2.9 show the generalized zoning districts within the Study Area.

Zoning in Salt Lake County

The portion of Camp Williams within Salt Lake County is bordered to the north by Herriman City and to the east by Bluffdale City. The camp is within unincorporated Salt Lake County and is zoned Forestry Recreation (FR-20) and Agriculture (A-2). Both FR-20 and A-2 zones are very low density and are compatible land uses adjacent to Camp Williams.

Herriman City Zoning

A portion of Herriman City makes up the north border of Camp Williams. Zoning in this area of the city is a mix of Forestry Recreation (FR-1, FR-2.5), Agriculture (A-1-43), Mixed Use (MU-2), and Manufacturing (M-1). Forestry Recreation and Agriculture are both low density zones with the minimum lot size being one acre. Mixed Use and Manufacturing allow for higher densities; however, the topography features west of Highway 68 may prevent higher densities from developing.

Bluffdale City Zoning

Camp Williams overlaps a portion of Bluffdale along its northeast border. The areas with the most impact to the camp are zoned Agriculture (A-5) and a low-density Residential (R-1-43). Both zones allow for very low-density development and will have minimal impact to the camp's operations. On the east side of Highway 68 is the Brighthurst

Station development, zoned SD-X Brighthurst Station. This special district is a mixed-use community consisting of commercial, higher density residential and open space. These uses are not typically compatible with Camp operations; however, the proximity of this development should be minimally impacted.

Zoning in Utah County

The southern portion of Camp Williams is within Utah County and has a zoning designation of Mining and Grazing (M&G-1). This is a very low-density zone with minimal development. To the south of Camp Williams is zoned Residential Agriculture 5 (RA-5). RA-5 historically has been irrigated land and utilized for growing crops and raising livestock. Any residential development must be on a minimum 5-acre parcel.

Lehi City Zoning

The majority of the land adjacent to Camp Williams within Lehi is zoned Planned Community (PC) and Transitional Holdings-5 (TH-5). TH-5 is designated primarily for the annexation of land where no water is dedicated upon annexation and where no City water or pressurized irrigation water services will be provided. If developed without a rezone to another district, residential lots must be at least one acre. PC zoning is established to encourage the comprehensive planning and coordinated development of areas identified as appropriate for a mix of uses and use densities. East of Highway 68 the PC district has been developed with a mix of low to medium density residential. A small portion of land adjacent to the camp is zoned Agriculture 1 (A-1). This is a very low-density zone which allows for agriculture uses and residential lot no smaller than two acres.

Lehi has a large amount of land zoned TH-5 and PC adjacent to Camp Williams. TH-5 District is designated primarily for the annexation of land where no water will be provided. Characteristic of this district is a continuation of uses and services existing at the time of annexation.



West Traverse Mountain Compatibility Area Study

Existing conditions indicate that development on this land will not occur until it is annexed into Lehi. When it is annexed, water and other utilities will have to be provided to accommodate development. There is currently not a timeline for annexation or development.

City of Saratoga Springs Zoning

Much of Saratoga Springs' future land uses within the Study Area include single-family detached residential, planned communities mixed-use, or office warehouse. Zoning districts associated within the Study Area are Agriculture (A), Low Density Residential (R1-20, 10, 9), Medium Density Residential (R3-6, MF-10), and High Density Residential (MF-14, 18). PC is also adjacent to the Study Area. All of these zoning districts, with the exception of Agriculture, allow for residential densities that could be impacted by normal Camp operations.

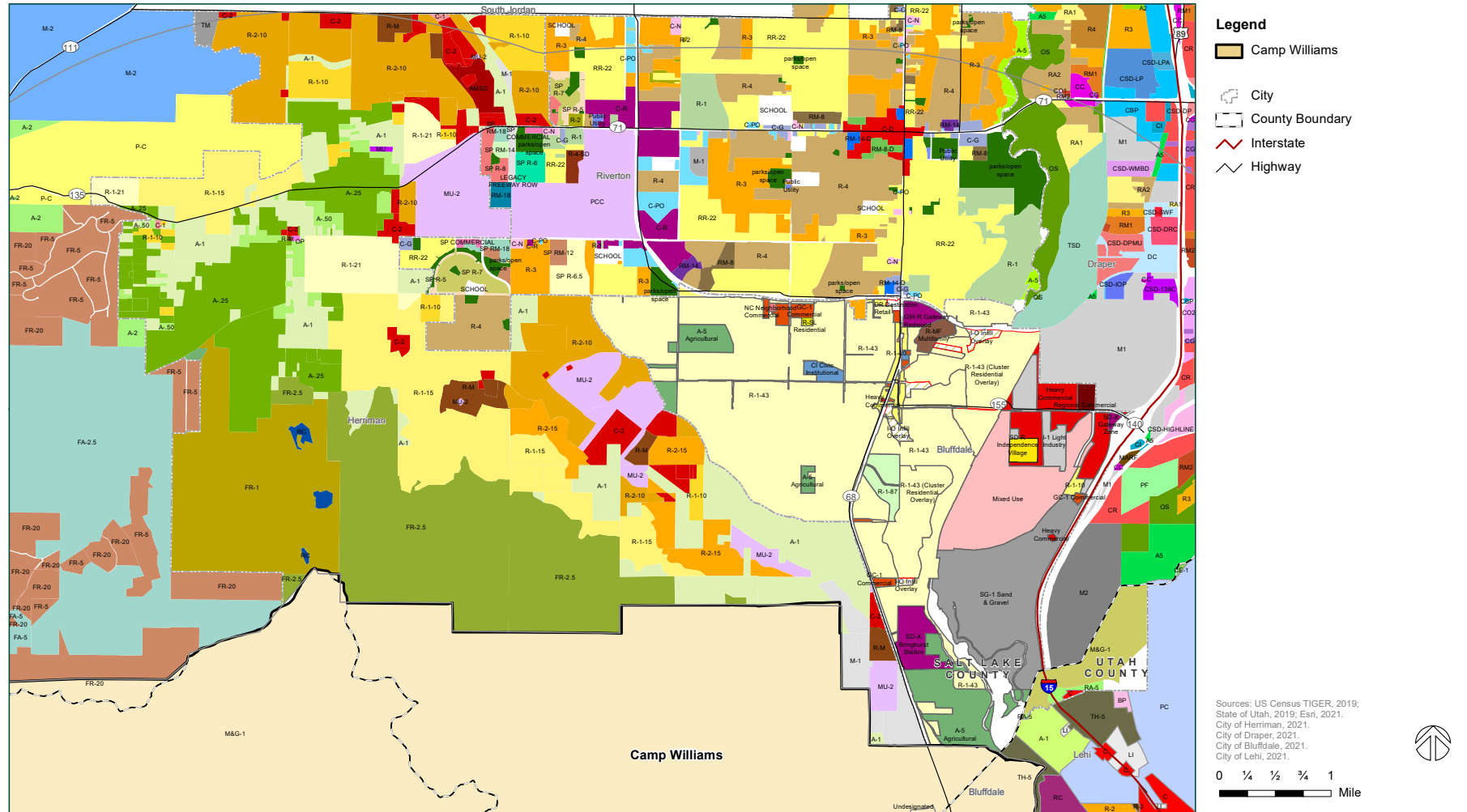
Eagle Mountain City

Areas in the immediate vicinity of the camp are intended to remain agricultural/rural, low-density residential. Zoning in this area is Agriculture/Rural Density 2 (RD2). The RD2 zone is for single-family large lots in traditional suburban neighborhoods with parks, trails, and other open space. The minimum lot size is one-half acre and an average lot size of three-quarter acre.

Town of Cedar Fort

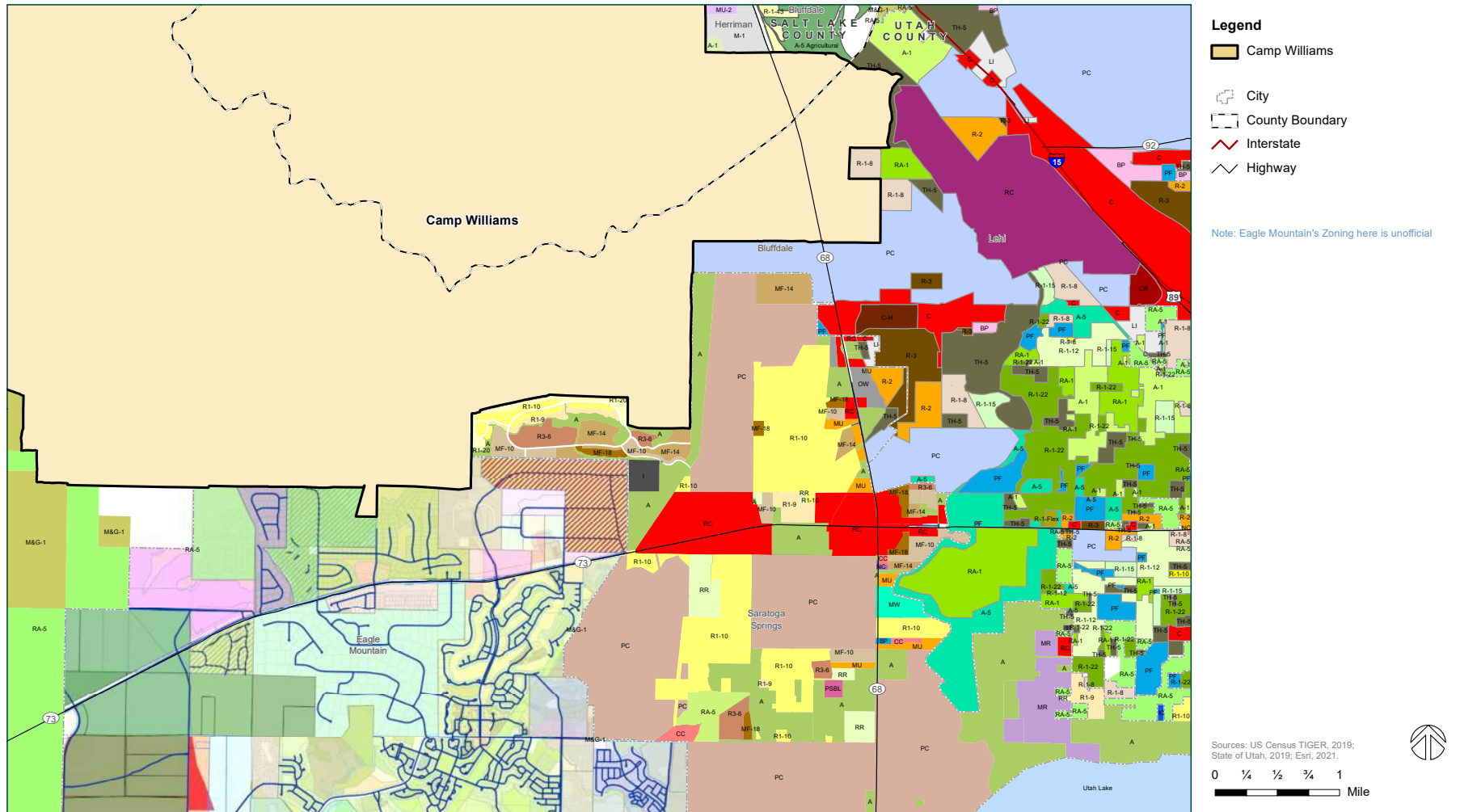
The Town of Cedar Fort is located southwest of Camp Williams and does not have any contiguous borders. Land within the Town closest to the camp is zoned Mining and Grazing (MG-40) and Residential Agriculture (RA-5, 10). MG-40 has a minimum lot size of 40 acres, RA-5 has a minimum lot size of five acres, and RA-10 has a minimum lot size of 10 acres. These zoning districts are considered very low density and any development within them, along with the distance from the camp, will not have any impact on Camp operations.

Community Overview



: || i fY&," Zoning - Northeast Development Area

West Traverse Mountain Compatibility Area Study



2.8 Future Land Use

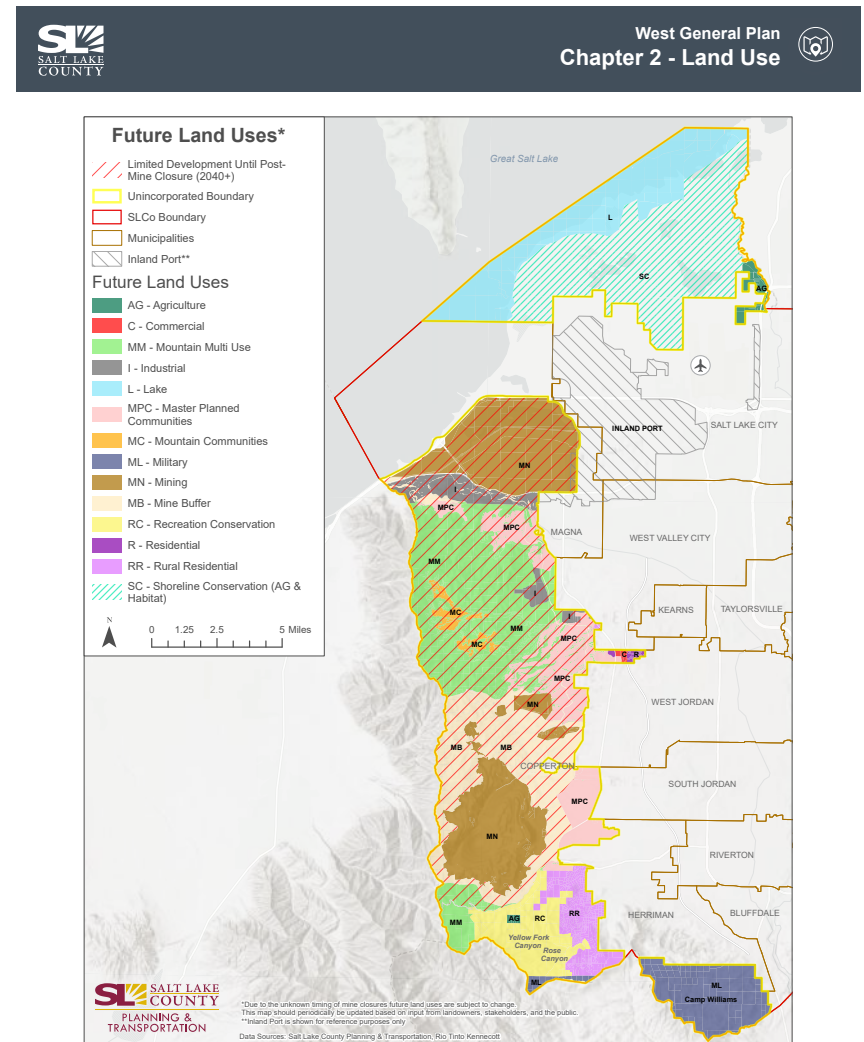
This section provides a description of the future land uses planned for the communities within the Study Area, as described in the associated communities' general plans. Further analysis of land use compatibility is found in Chapter 5.

Salt Lake County

Unincorporated portions of Salt Lake County reside along Camp Williams' northern border, surrounding Herriman City. The future land uses within the Study Area include recreation conservation and rural residential. Recreation and conservation land uses include outdoor recreation such as trails, open space, habitat, and recreation activities. Rural residential includes large lots of typically 2-5+ acres per dwelling unit. The county's general plan encourages the continuation of these uses in the Study Area as depicted in Figure 2.10.

Approximately 6,420 acres are within the West General Plan Study Area. Camp Williams straddles the Salt Lake County/Utah County boundary, with 7,482 acres in Salt Lake County (31% of total) and 16,593 acres in Utah County (69% of total).

Figure 2.10 Future Land Use, Salt Lake County



Source: West General Plan, Salt Lake County

West Traverse Mountain Compatibility Area Study

Utah County

As identified in the 2014 Utah County General Plan, the unincorporated areas of the county within the Study Area are primarily agricultural in nature, with allowed uses of mining and grazing, and agricultural residential, as depicted in Figure 2.11. The county furthermore identifies the Camp Williams Military Compatibility Overlay Area (MOCA), encouraging uses consistent with military operations per the 2012 JLUS. The county finds that the MCOA's objectives are generally consistent with county plans and objectives.

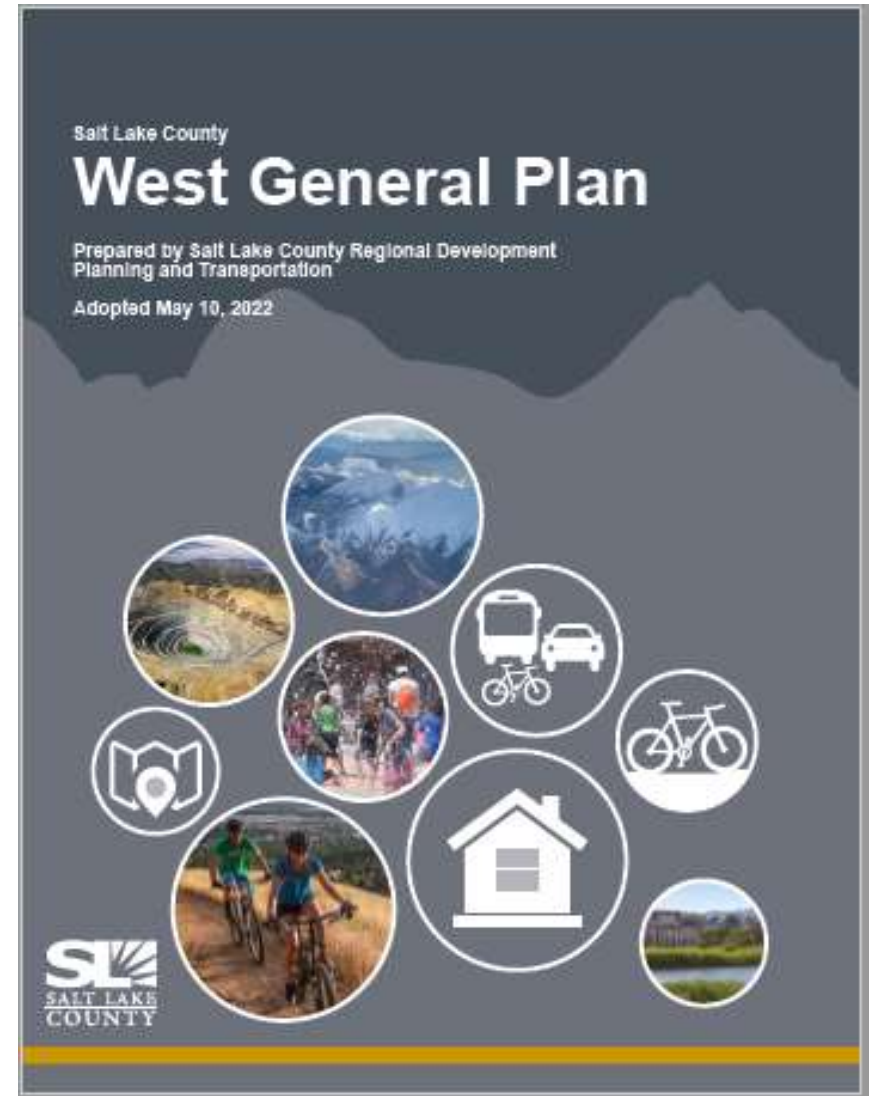
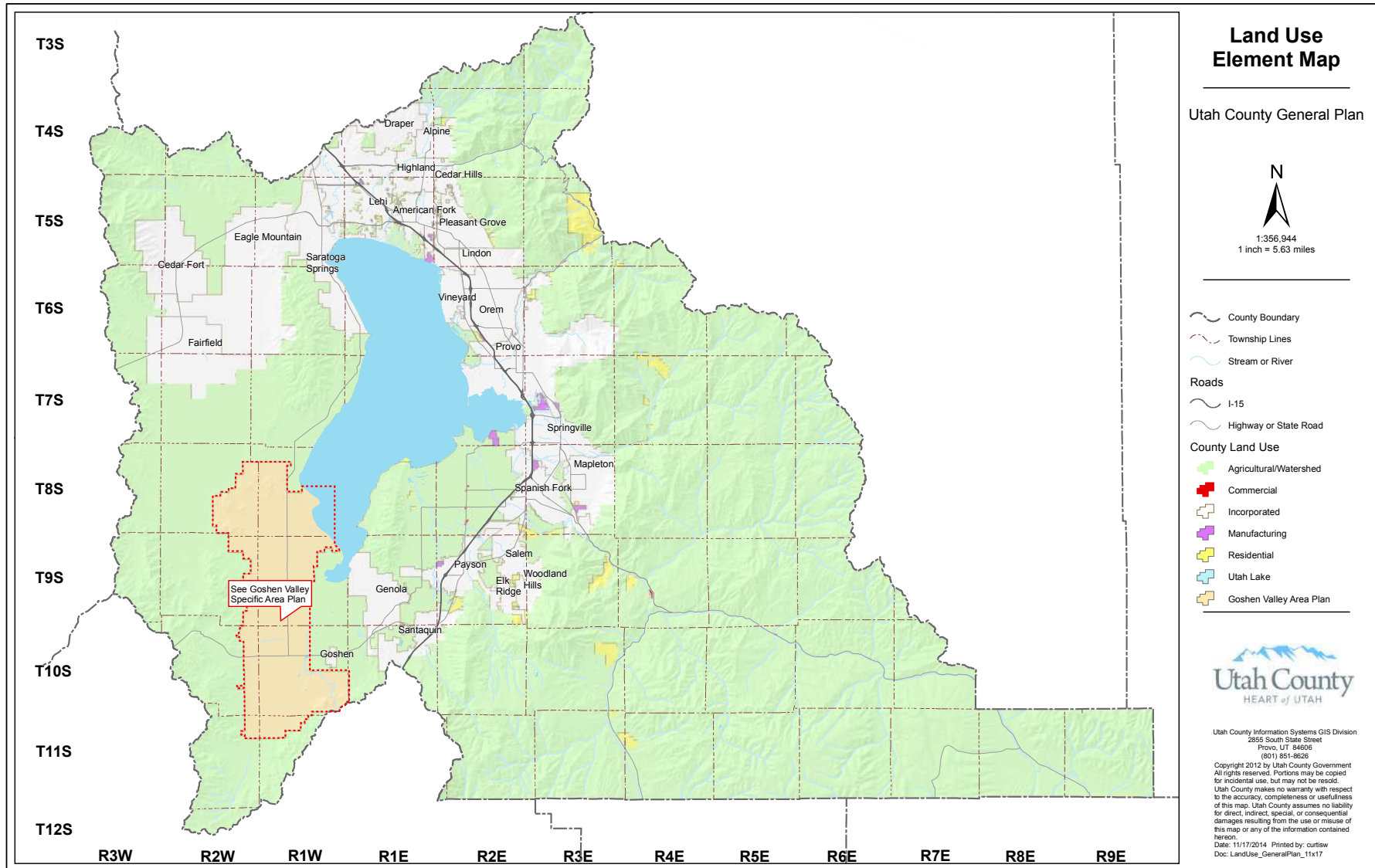


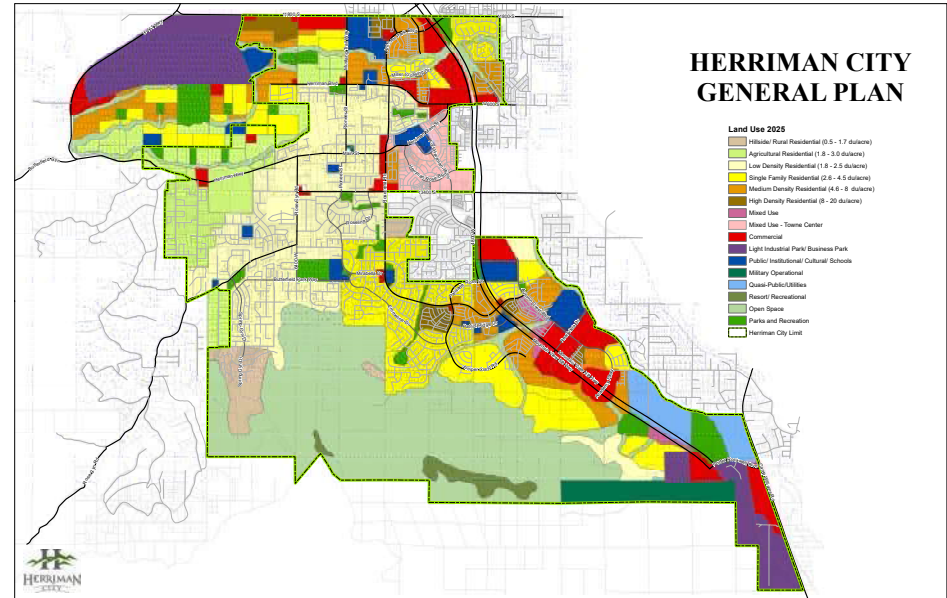
Figure 2.11 Future Land Use, Utah County



Herriman City

Located north of Camp Williams, much of Herriman City's future land uses include open space, recreational resorts/activity centers, employment centers, and mountain/canyon residential. In Herriman, employment centers include uses such as business, technology, creative services, craft industry, start-up/entrepreneur space, and light industry-focused development. Like Salt Lake County, the mountain/canyon residential uses are intended to be rural/remote homes of varying sizes, primarily on large lots. These areas are shown in Figure 2.12.

Figure 2.12 Herriman City General Plan



General Plan, City of Herriman, 2022.

Bluffdale City

Partially overlaying the northeast portion of Camp Williams, Bluffdale City's future land uses, as identified in the 2022 general plan, close to Camp Williams include very low-density residential, open space, mixed-use, commercial, and business parks. Very low-density residential encourages large-lot residential and agricultural uses with less than one dwelling unit per acre, while low-density residential may allow up to one to four dwelling units per acre. Mixed uses are intended to balance residential and commercial uses with a minimum average density of 5.5 dwelling units per acre. Commercial encourages activity centers which may include retail, office, personal services, entertainment, and public facilities. Business parks may include uses such as offices, research and development facilities, and corporate headquarters. Figure 2.13 depicts Bluffdale City's future land uses according to the 2014 general plan.

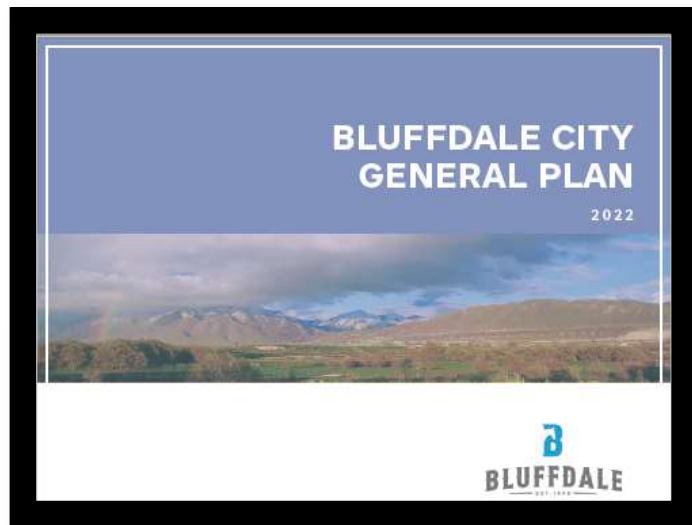
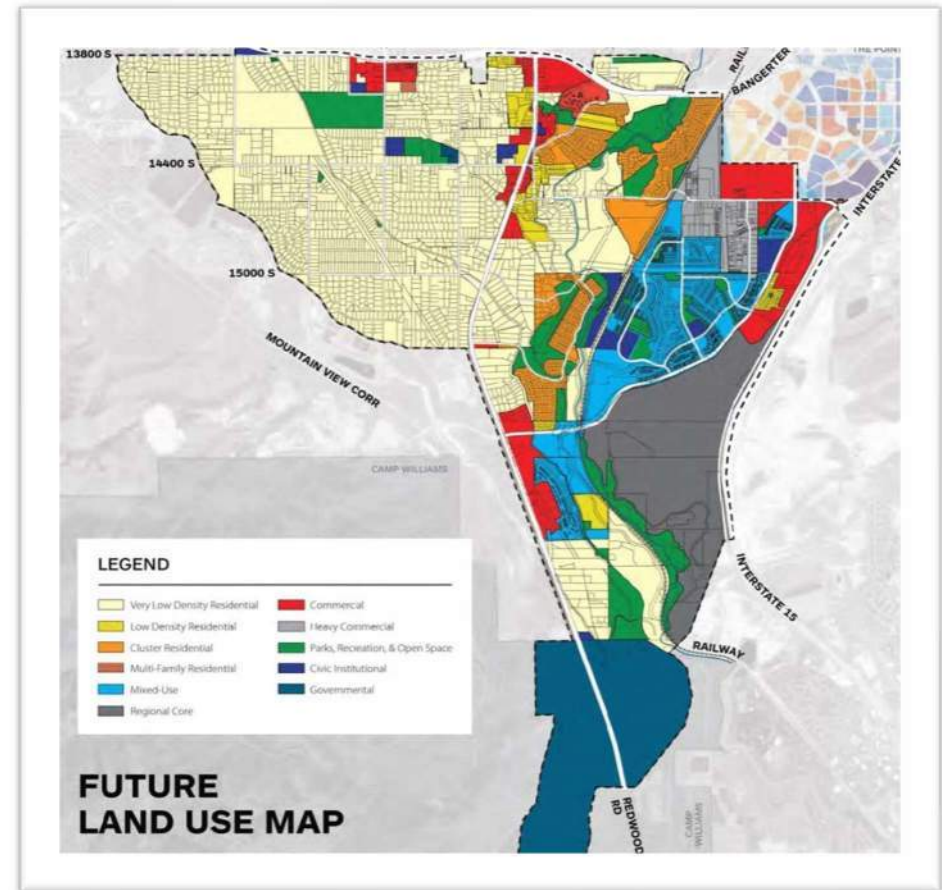


Figure 2.13 City of Bluffdale Future Land Use Map



Future Land Use, City of Bluffdale, 2022.

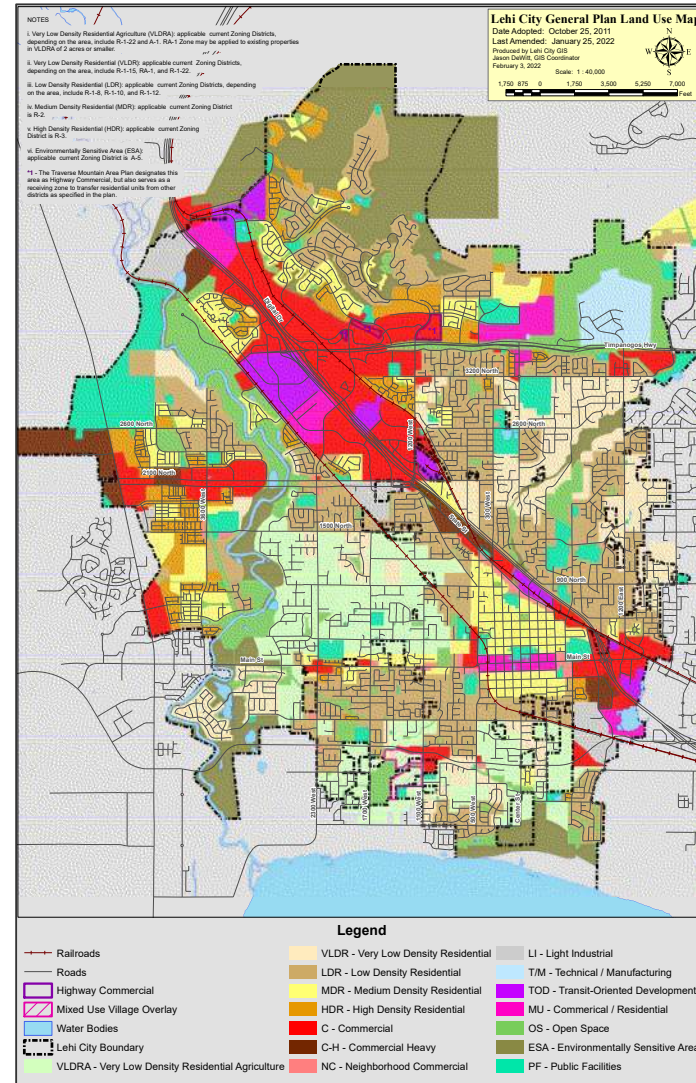
West Traverse Mountain Compatibility Area Study

Lehi City

The draft Lehi General Plan identifies various future land uses for the growing city. Within the Study Area, Lehi City's future land uses include heavy commercial, regular commercial, public facilities, medium-density residential, mixed-use, and transit-oriented development. While some of these uses may not be compatible with military missions, the draft general plan recognizes the importance of coordinating with Camp Williams to ensure compatible development as identified in the 2012 JLUS. Figure 2.14 shows planned future land uses for Lehi City.



Figure 2.14 Future Land Use Map Lehi



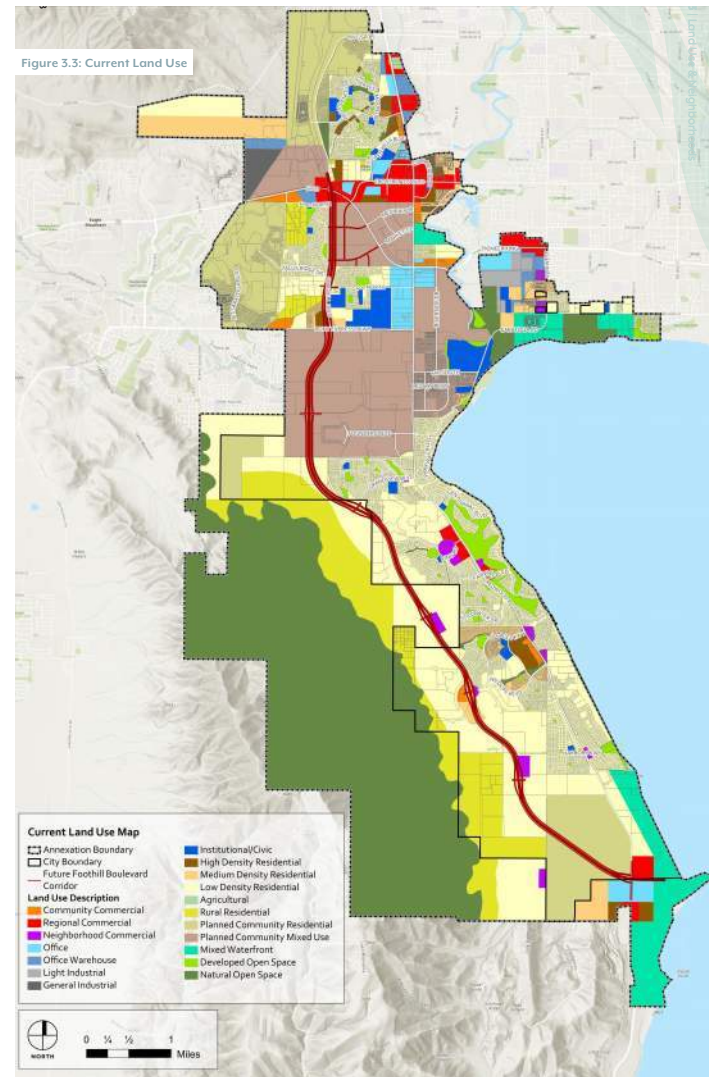
City of Lehi, 2022.

City of Saratoga Springs

Much of Saratoga Springs' future land uses within the Study Area include single-family detached residential, planned communities mixed-use, or office warehouses. The plan does not directly identify the need for communicating new development with Camp Williams, despite its proximity to the installation. Figure 2.15 depicts the future land uses for Saratoga Springs within the Study Area.



Figure 2.15 Future Land Use Map Saratoga Springs



Source: Saratoga Springs, 2021

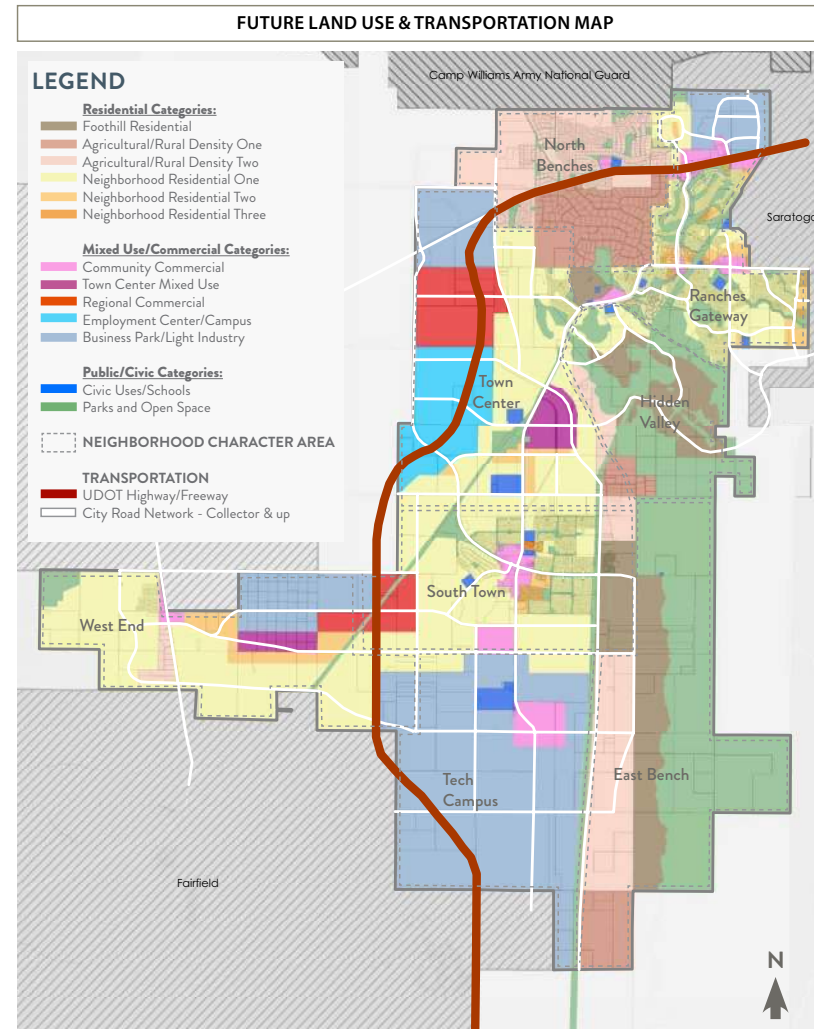
West Traverse Mountain Compatibility Area Study

Eagle Mountain City

Future land use in Eagle Mountain City will not change much from current uses in those areas close to Camp Williams according to the 2018 general plan. Aside from increasing neighborhood residential through the center, southern, and western portions of the cities, those areas in the immediate vicinity of the camp are intended to remain agricultural/rural, low-density residential, or business park/light industrial in nature. Some regional commercial centers are planned for the city; however the plan recognizes the Camp Williams MCAOD and importance of coordination and consideration for land use and infrastructure decisions that impact or may be impacted by the camp's mission requirements. Figure 2.16 depicts the future land uses for Eagle Mountain within the Study Area.



Figure 2.16 Future Land Use Map Eagle Mountain



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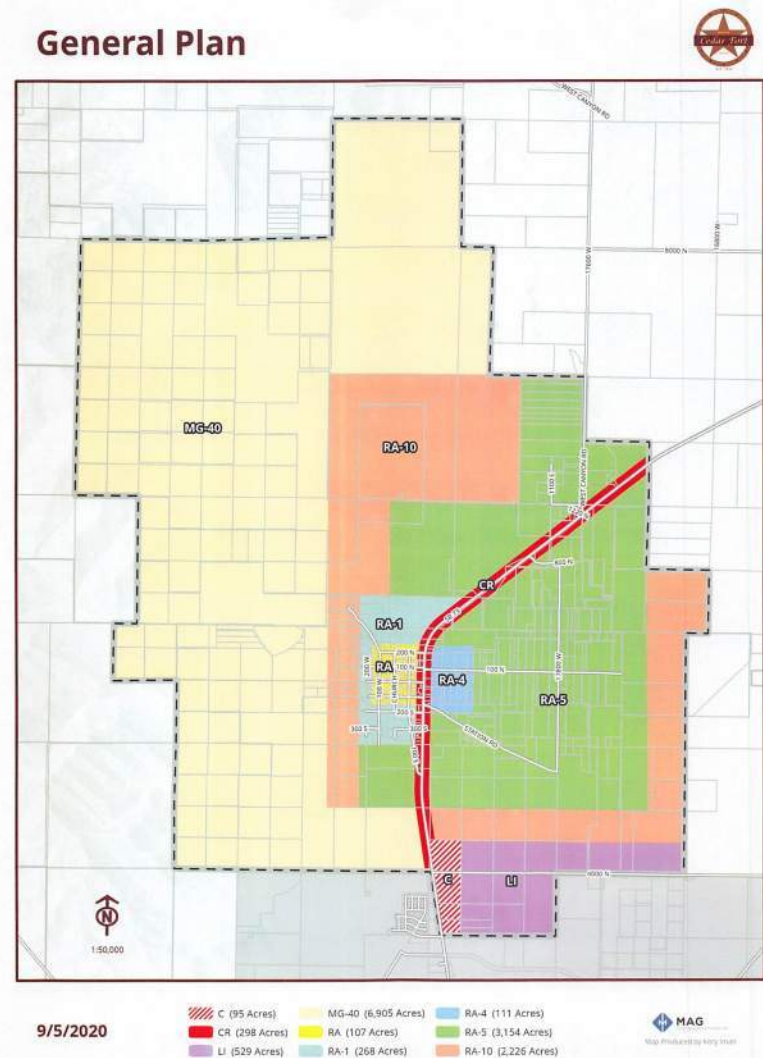
Source: Eagle Mountain City, 2018

EAGLE MOUNTAIN GENERAL PLAN

Town of Cedar Fort

Future land uses in Cedar Fort are not anticipated to change in the near future according to the 2020 general plan. The lands closest to Camp Williams are designated Rural Agriculture and Mining and Grazing, both classifications are intended to preserve as much open space as possible. Figure 2.17 depicts the future land uses for the Town of Cedar Fort within the Study Area.

Figure 2.17 Future Land Use Map Town of Cedar Fort



Source: Town of Cedar Fort, 2020



West Traverse Mountain Compatibility Area Study

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A soldier in a desert environment, wearing a helmet and tactical gear, is looking out from the side of a vehicle. The background shows a vast, arid landscape with rolling hills and a dirt road winding through the distance under a hazy sky.

3

Camp Williams Overview

This chapter provides an overview of Camp Williams, including a brief history, a description of the installation, and a summary of its missions and operations. This chapter also reviews the military footprints that extend beyond the installation's boundary.

3.1 Camp Williams Surrounding Area

Camp Williams is located on Highway 68 about 26 miles south of Salt Lake City and straddles the border of Salt Lake County and Utah County. The camp is situated in the western range of the Traverse Mountains and consists of 24,000 acres of mountainous combat-training areas resembling similar environments encountered in global military operations. Its cantonment area, east of Highway 68, is generally flat.

In 2013, the National Security Agency (NSA) built a Community Comprehensive National Cybersecurity Initiative Data Center at Camp Williams called Utah Data Center, providing a series of data centers that store and process cybersecurity information. This location, near Camp Williams, was chosen because of its proximity to Salt Lake City International Airport, the abundance of affordable energy, the energetic software industry in Salt Lake City, and the existing internet infrastructure.

The surrounding communities consists of one of the fastest growing regions in the United States which presents many issues to the success of Camp Williams as a military installation. Camp Williams and the Utah National Guard (UTNG) have strategically purchased adjacent land and converted it into the West Traverse Sentinel Landscape Area which acts as a buffer between civilian land use and military uses as well as provides areas for wildlife preservation. The easement consists of 3,077 acres and works to enhance both the military's ability to continue using the camp for training and the quality of the natural environment. The City of Herriman has already built eight miles of trail on the conserved land under the Army Compatible Use Buffer (ACUB) program.



*Live-fire artillery demonstration using two M109A6 Paladins at Camp Williams on May 15, 2021
(Ileen Kennedy/DVIDS, 2021)*

History

Camp Williams traces its origins back to training areas used by the Utah Territorial Militia, a precursor to today's Utah Army National Guard. The Territorial Militia used this area as a semi-permanent training camp prior to the camp's official recognition as a formal training area. The camp was officially founded in 1914 when President Woodrow Wilson withdrew 18,700 acres from the public domain by executive order and designated them specifically for military purposes. This newly designated area was rough and rugged, with no suitable place for a bivouac area, as a result, the State rented and later purchased flat land in the foothills and Jordan River Valley. With this addition, Camp Williams made an excellent site for a training camp. In 1926, the camp was named for Brigadier General W. G. Williams, who provided the impetus for the purchase of the land to provide a cantonment area and the establishment of the camp as a permanent military training site.



Cantonment area and parade field of Camp Jordan Narrows, Utah, circa 1920, renamed Camp William G. Williams in 1928 in honor of his efforts to establish the permanent training site for "intensive training in every duty that may be expected in an artillery regiment on active service against an enemy."
(Utah National Guard, Accessed from ut.ng.mil/History/ on April 3, 2022)

The federal government funded a majority of the improvements and development in Camp Williams. In return, the state agreed that it would make all National Guard facilities available in times of national emergency for training sites and for other purposes deemed essential for national security. During World War II Camp Williams became a sub-post and training site for Fort Douglas, Utah. During this time, the U.S. Army constructed over 100 buildings for training and housing purposes. At the conclusion of the war, Camp Williams was declared surplus, and the base, with its newly built facilities, was returned to the State.

Today, Camp Williams serves as a cornerstone to Utah's National Guard and is part of a diverse regional economy. The camp provides critical training opportunities to Utah Army National Guard units, Army Reserve components, the Utah Department of Safety, and the U.S. Department of Justice. Camp Williams is a multi-service, multi-mission National Guard installation.



3.2 Mission and Operations

Camp Williams provides training facilities for the Utah Army National Guard (UTARNG) and Utah Air National Guard, the U.S. Marine Corps and Marine Corps Reserve, the U.S. Air Force and Air Force Reserve, and Reserve Officers Training Corps. Camp Williams is also home to the Non-Commissioned Officer's Basic Leader Course, which is provided to active, National Guard, and reserve components.

According to the Utah National Guard's Adjutant General, Major General Michael J. Turley, the Utah National Guard has two primary missions:

The first is to support the people of the State of Utah. When called upon by the governor, units and Guard members support civil authorities in protecting life and property. They are also called upon to help preserve peace, order, and public safety, which are integrated into the Homeland Defense mission.

The second mission of the Utah Army National Guard is to the people of the United States. When called upon by the president, the Guard provides well-trained and fully equipped military units to serve as part of the total force in times of war or other national emergencies.

Camp Williams is home to a variety of organic and tenant units and organizations including:

Utah Training Center (UTC)

The UTC is a major command of the UTARNG and consists of the Army Garrison Camp Williams command team, 120 military and civilian staff providing mission and facilities support for Camp Williams, organic and tenant units and organizations, and the units and soldiers training there. The UTC provides the people, infrastructure, modernized-range capabilities, integrated installation-level logistical support and services to train, sustain, mobilize, and enable a rapidly deploying lethal force. UTC supports training exercises, professional development courses, conferences, and daily operations to all UTNG units, 19 Reserve units (Army, Air, Marine), and 15 active-duty units (Army, Air, Navy, Marine). UTC has stewardship over Camp Williams and is responsible for all that occurs on the installation. The unit provides support in the way of operations, logistics, ranges, and support facilities, including administration buildings, dining facilities (fully equipped if so requested), classrooms, and a complex of warehouses, workshops, and maintenance facilities.

19th Special Forces Group (SFG) (Airborne)

The 19th SFG Airborne trains, equips and deploys Special Operations Forces (SOF) to conduct Special Warfare globally as directed by the U.S. Special Operations Command (USSOCOM). On order, each 19th SFG element responds to homeland threats, disasters, or other assigned domestic missions as directed by the governor of Utah. On Camp Williams, 19th SFG units include a Headquarters, a Headquarters Company, and the 1st Battalion–19th SFG, which is comprised of a Headquarters and Headquarters Detachment, Company B, and a support company. Additionally, Companies C and F from the Group Support Battalion are assigned to Camp Williams.

65th Fires Brigade

The 65th Fires Brigade at Camp Williams is comprised of a Brigade Headquarters, a Headquarters Battery, and the Headquarters and Headquarters Battery for the 1-145th Field Artillery Regiment. The Brigade's federal mission is to plan, prepare, execute, and assess

Camp Williams Overview

combined arms operations to provide close support and precision strikes for corps, divisions, brigade combat teams, and support brigades, employing joint and organic fires and capabilities to achieve distribution effects in support of the commander's operational and tactical objectives. The Brigade's state mission is, on order, to provide operational command and control of Department of Defense and National Guard forces in support of civil authorities in disaster relief and emergency operations, and to provide assigned force packages as required from subordinate elements.

Medical Command (MEDCOM)

Utah MEDCOM plans, programs, and sustains health force protection and medical/dental support to ensure medical readiness, operations, training, mobilization, and demobilization of UTARNG units.

204th Maneuver Enhancement Brigade (MEB)

204th MEB provides trained and disciplined forces, equipment, and resources in support of civil authorities in disaster relief and emergencies or as otherwise required by the Governor of Utah and by law. The MEB is specially configured to provide command and control of maneuver support units with a diverse staff. The 204th MEB commands three units that are tenants at Camp Williams: a Headquarters and Headquarters Company, the 217th Signal Company, and the 115th Engineer Detachment.

640th Regiment–Regional Training Institute (RTI)

The 640th Regiment, or RTI, is a military training organization that carries out a broad range of instruction to enlisted personnel. The 640th Regiment RTI commands four battalions with different training objectives:

- 1st Battalion–Non-Commissioned Officer (NCO) Academy
- 2nd Battalion–Modular/Signal
- 3rd Battalion–Field Artillery
- 4th Battalion–Military Intelligence

144th Area Support Medical Company

The 144th Area Support Medical Company provides Echelon I and II Combat Health Support to conserve the fighting strength of the U.S. military by collecting, sorting, treating, and returning to duty, patients as far forward as possible.

Company C, 4th Light Armored Reconnaissance (LAR) Battalion

Company C or Charlie Company, 4th LAR, is assigned to Camp Williams and reports directly to the 4th Marine Division. Charlie Company trains monthly at Camp Williams and conducts operations out of Building 2620.

Utah Translation and Analysis Center (UTAC)

The UTAC is a partnership of the National Drug Intelligence Center, the Department of Justice, and the Utah National Guard. The facilities at Camp Williams support the document exploitation team. UTAC provides real-time translation and analysis support to federal, state, and local law enforcement by conducting document and computer exploitation of materials associated with counterdrug and counterterrorism investigations.

Military, Welfare, and Recreation (MWR) – Utah MWR

Camp Williams MWR coordinates with local civilian youth groups to visit the camp for activities that help teach leadership skills, flag etiquette, core values, outdoor and survival skills, land navigation skills, and physical fitness.

Camp Williams Emergency Vehicle Operations (EVO) Range

The Utah Department of Public Safety is the primary user of the EVO Range where basic training cadets and existing officers are trained on safe vehicle maneuvers. Other law enforcement agencies and military units have access to the range located in the southeast part of the cantonment area.



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A Photo of the EVO Range from above Camp Williams (Larry Dotson/Matrix, 2021)

Mission Footprint

Camp Williams is situated in the western range of the Traverse Mountains and consists of 24,000 acres. Camp Williams and the Utah National Guard (UTNG) have purchased adjacent land which acts as a buffer between civilian land use and military uses consisting of 3,077 acres.

Beyond the physical space of the installations, Camp Williams also occupies airspace. Air operations happening within and around the study area must be coordinated with neighboring communities along with Salt Lake International airport.

Training exercises such as aerial gunnery, mortars, artillery, grenades, automatic weapons, and small arms create noise which is detailed further in this chapter. Noise contours extend beyond the boundary of Camp Williams and will further impact neighboring communities, given the rapid pace of growth happening in proximity to the study area.

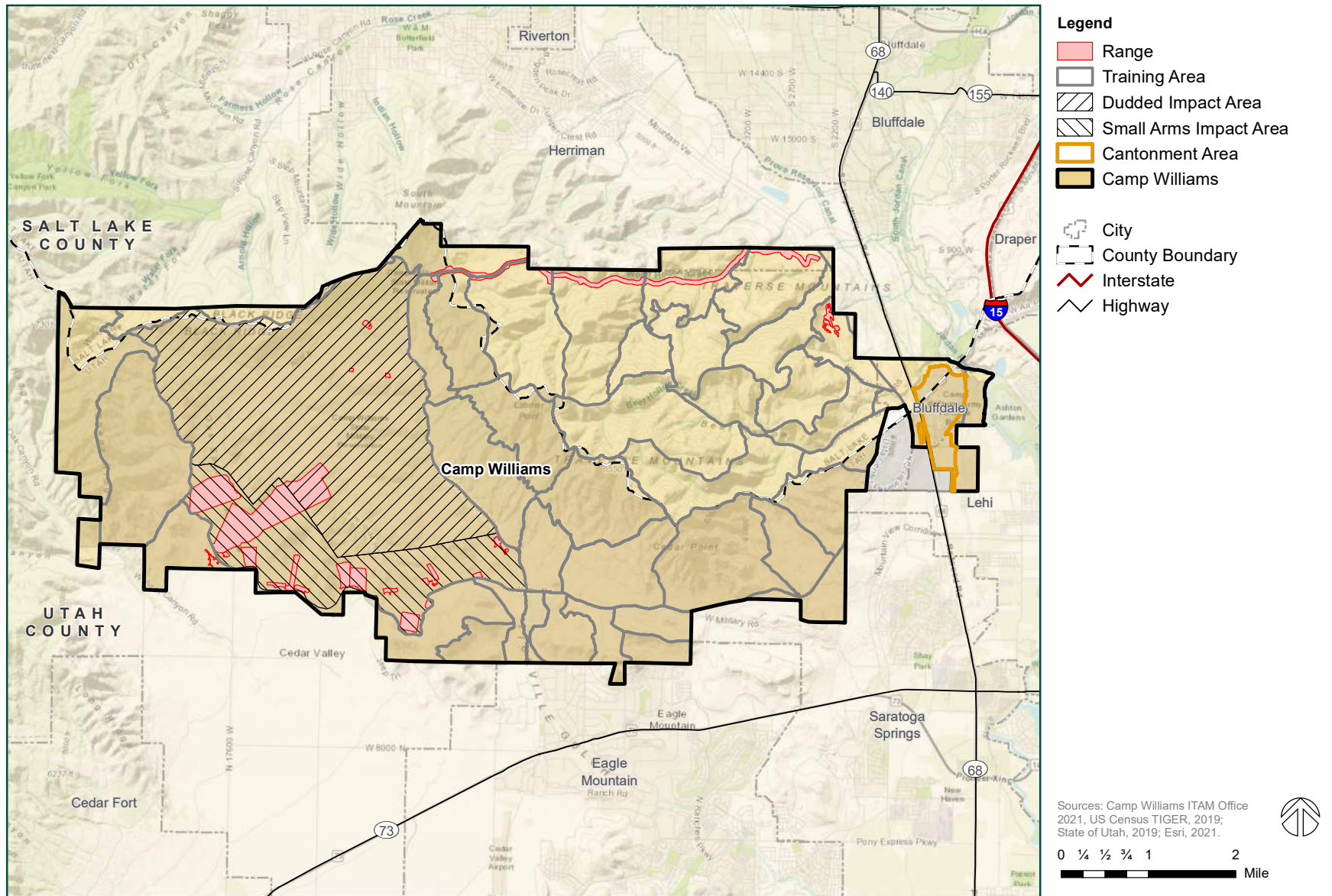
Facilities and Training Areas

Camp Williams boasts robust capacity to accommodate rotational military units and organizations for training and recreational purposes. The camp supports lodging, dining, maintenance, training, storage, and recreation through a multitude of facilities.

The wide variety of training opportunities and diverse geography and climate are what make Camp Williams an asset to the military community. Within the 20,979 acres of Range Training Area there are:

- 25-Meter Ranges
- Modified Record Fire Range
- Known Distance Range
- Multi-Purpose Machine Gun Range
- Combat Pistol Range
- Biathlon
- Police Officers Standards and Training Area
- Alt Pistol Range
- Hand Grenade Range
- Light Demolition Range
- Land Navigation Course
- Special Forces Land Navigation Course
- Military Operations in Urban Terrain Training Area
- Engineer Qualification Area
- Improvised Explosive Device Training Lane
- Live Shoot House
- T-TAC (Tickville Training Area Compound)
- Infantry Squad Battle Course
- Combat in Cities Range
- Leadership Reaction Course
- One Station Trainer
- Watts Road
- Aircraft Training Routes
- Artillery Firing Points and Impact Areas
- M203 Range
- Aerial Gunnery Range
- Mine Detection Course
- Rappel Tower
- 34-foot Airborne Trainer

Camp Williams Overview



Air Operations

Camp Williams has a special use airspace, R-6412, which is activated during live fire activities. This affects FAA airspace and Camp Williams must coordinate with them when activating restricted airspace. Salt Lake Airport airspace is also above Camp Williams. This can also create issues when live fire events are taking place. Coordination between Camp Williams and Salt Lake Airport is important but can sometimes be difficult.

Noise

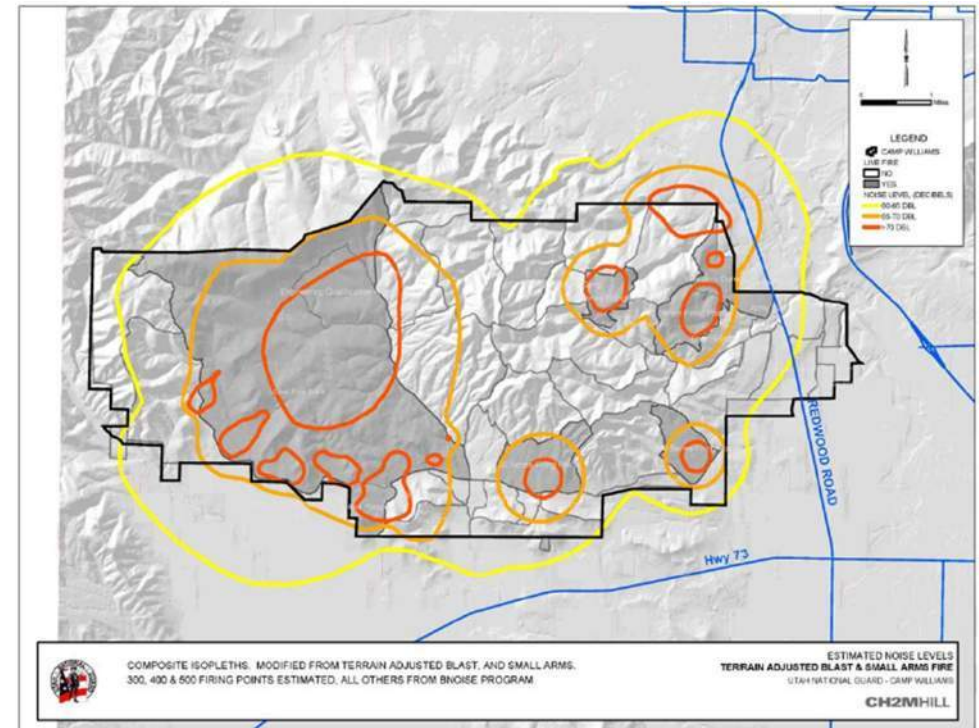
Camp Williams Military Reservation support live-fire training with practice ranges for aerial gunnery, mortars, artillery, grenades, automatic weapons, and small arms. These sources of noise are referred to as 'impulsive noises.' The practice firing areas and impact zones are located across large sections of the Military Reservation Lands. Some of these sources generate impulsive noise that propagates off-site to non-Guard neighbors and communities who can be affected by noises generated within Military Reservation Lands.

The Camp Williams Cantonment Area houses military troop administrative, training, dining, and accommodation facilities; a state-of-the-art equipment maintenance facility; equipment and vehicular storage and fueling operations; extensive classroom facilities; and other troop support capabilities. There should be no weaponry detonation within the Cantonment Area, during routine facility operation.

The only outdoor firing of weaponry that might occur within the Cantonment Area is anticipated to be localized firing of small arms during a special occasion, function, or celebration. Occasionally, similar small arms firing occurs within the fenced Military Memorial Park that is located due north of the Cantonment Area and east of U.S. Route 68. In all such small arms firing use, 'blank' bullets are to be employed. Lastly, on occasion, relatively small concerts or programs are conducted at the

outdoor palladium venue within the Cantonment Area. Such performances are considered a potential source of noise.

Figure 3.2 Noise Map



Source: Utah National Guard Environmental Resource Management, Noise Management Plan, 2006

3.3 Economic Benefit

Locally, Camp Williams is an important economic engine contributing to the regional economy through sustained direct employment, indirect spending, and construction. Statewide, the Utah National Guard provides over 13,000 jobs, contributes over \$477 million in annual payrolls, and generates over \$840 million to Utah's gross domestic product. As the home to the 640th Regiment Regional Training Institute (RTI) and one of the largest RTI training facilities in the western U.S., Camp Williams captures a large portion of the Utah National Guard's employment and spending. This spending is fed back to local communities where military personnel and civilian employees reside. In addition, the installation is an essential asset to the civilian community, as it is used by local law enforcement agencies for training, by youth groups for team-building retreats, and by the public for special events.



In fiscal year 2020, the Utah National Guard employed a total of 7,832 full- and part-time personnel, paying a total of \$289.35 million in wages and salaries. The Utah National Guard also spend \$88.7 million of federal funds in Utah during that same year on operations and maintenance costs. In total, the Utah National Guard spent \$383.6 million in the state. Spending consisted of payroll, contracts, government purchase card transactions, and federal-reimbursed state spending. About two-thirds of this, \$37.2 million, was spent on construction.

3.4 Camp Williams Community Contributions

Camp Williams has a strong relationship with neighboring communities. With the help of local, state, and federal partners, Utah established the West Traverse Sentinel Landscape Act, which directly aims to maintain the mission of the base by creating the West Traverse Sentinel Landscape Coordinating Committee and by facilitating a buffer zone around Camp Williams. The Act may be read in its entirety here: <https://le.utah.gov/~2018/bills/hbillenr/HB0257.pdf>.

In addition to designating sentinel landscapes, federal, state, and local partners worked directly with the Department of the Army to establish an Army Compatible Use Buffer (ACUB) around Camp Williams, which aims to protect military training from the effects of encroachment by making either simple purchases or easement transactions which benefit both the landowner and the military.

In addition to these conservation efforts, the DoD's Readiness and Environmental Protection Integration Program (REPI) contributes greatly to protecting the training areas crucial to the mission of Camp Williams. In coordination with state and local governments, conservation organizations, and willing private landowners, the DoD works through land preservation to minimize impacts on the military mission. As of September 2021, the REPI program has preserved 2,443 acres surrounding Camp Williams in 20 transactions.

Community Outreach

Camp Williams engages with nearby communities on several levels pertaining to water resources, surrounding development and wildfire prevention. Camp representatives meet with local committees discussing transportation and land use projects that will impact the Camp. With the rapid growth happening around the Camp, it is important to engage with community members and have input on issues that may affect Camp operations.



Ambassador presenting to a constituent group.

4

Existing Planning and Compatibility Tools

This chapter reviews existing programs, plans, policies, laws, governing regulations, and other planning tools that are used, applied, or available for evaluating and/or mitigating compatibility issues in the project Study Area. Several of these tools address compatibility either directly or indirectly through other topics covered. This review summarizes applicable planning tools and how each may apply to compatibility findings, as defined in Chapter 6. The tools presented in this chapter are organized by level of government:

- Federal Programs and Policies
- State of Utah Legislation
- CAS Partner Community Plans and Ordinances
- Camp Williams Tools

4.1 Federal Programs and Policies

Federal law authorizes federal, state, and local entities to implement regulatory measures and policies to protect the multiple resources that are involved in land use and military compatibility planning. The intent of these measures and policies is to protect the quality of life and general welfare of the public and to preserve military areas. These tools assist land use decision-makers and planners at all levels of government in making informed decisions that enable compatible land use development between military installations and the surrounding communities.

Federal laws, policy, and programs have evolved to affect almost every aspect of land use. A broad range of federal plans, programs, and actions impact Camp Williams both directly and indirectly. Federal programs and policies are carried out by the various arms of the federal government, although in some cases these tools also authorize state, county, regional, or local governmental agencies to implement related policies, programs, and regulations. The following federal programs and policies were evaluated to assist in determining where areas of improvement could enable better compatibility and recommended land use planning at the local level.

The items listed below are not an attempt to provide an exhaustive accounting of every relevant federal law or program. Rather, the list attempts to capture those considered most relevant to the assessment of compatibility issues and to the strategies that stakeholders might employ to avoid or mitigate conflicts. The federal plans and programs included in this section are:

- American Indian Religious Freedom Act
- Ammunition and Explosives Safety Standards 385-64

- Army Compatible Use Buffer
- Army Installation Strategy
- Army Operational Noise Management Program
- Army Regulation 200-1, Environmental Protection and Enhancement
- Army Regulation 200-4, Cultural Resources Management
- Building Resilient Infrastructure and Communities (BRIC)
- Clean Air Act (CAA)
- Clean Water Act (CWA)
- Comprehensive Environmental Response, Compensation, and Liability Act
- Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy
- Department of Housing and Urban Development (HUD) Noise Regulation
- Department of Defense (DoD) Conservation Partnering Initiative
- DoD Defense Community Infrastructure Program
- DoD Directive 4170.11 Installation Energy Management
- DoD Directive 4715.21 Climate Change Adaptation and Resilience
- DoD Instruction 4715.03 Natural Resource Conservation Program
- DoD Instruction 4715.16 Cultural Resources Management
- DoD Military Aviation and Installation Assurance Siting Clearinghouse
- DoD Minimum Antiterrorism Standards for Buildings (Unified Facilities Criteria (UFC) 4-010-01)
- DoD Operational Noise Management Program

Existing Planning & Compatibility Tools

- DoD Readiness and Environmental Protection Integration (REPI)
- Endangered Species Act (ESA)
- Federal Aviation Act
- Federal Aviation Administration (FAA) Guidance on Drone Operations
- Federal Land Policy and Management Act of 1976
- Intergovernmental Support Agreements (IGSAs)
- Migratory Bird Treaty Act
- National Environmental Policy Act (NEPA)
- National Historic Preservation Act (NHPA)
- Noise Control Act of 1972
- Safe Drinking Water Act
- Sentinel Landscapes
- Sikes Act
- Sustainable Range Program (SRP)
- Telecommunications Act of 1996 and the Federal Communications Commission (FCC)

American Indian Religious Freedom Act

The American Indian Religious Freedom Act establishes the rights of Native Americans to access sacred sites or sites of religious importance. A religious site may or may not contain physical remains, objects, or other elements that indicate it is a religious site. The Act defines a religious site as including, but not limited to, any geophysical or geographical area or feature:

- Sacred to Native American religion;

- Defined as sacred in Native American religion(s);
- Visited by Native American practitioners for gathering, harvesting, or maintaining natural substances or natural products for use during ceremonies, rituals, or spiritual purposes; and/or
- Used by Native American religious practitioners for ceremonies, rituals, or other spiritual practices.

Ammunition and Explosives Safety Standards

Department of the Army Pamphlet 385-64 details the Army's safety criteria and standards for operations involving ammunition and explosives. The pamphlet includes mandatory procedures and guidance, as well as preferred methods of executing the procedures. Pertinent information in the pamphlet includes, but is not limited to, explosives safety training standards, explosives safety management programs, safety inspection procedures, and guidance for creating installation ammunition/explosive location maps. This information is beneficial for ensuring safety on Army installations that have ammunitions and explosives operations.

Army Compatible Use Buffer Program

Title 10, Section 2684a of the United States Code (USC) authorizes the DoD to partner with non-federal governments and private organizations to establish buffer zones around critical active military assets. The Department of the Army implements this authority through the Army Compatible Use Buffer (ACUB) program. Through ACUB, Army installations can work with organization partners, such as land trusts, to acquire land or development rights to establish buffer zones that help protect military training areas, as well as critical habitats and other sensitive areas important to military, community, and environmental sustainability — without the Army's investing in additional land ownership. The acquisition and management of land or land rights are to the benefit of partner organizations.



Army Installation Strategy

The 2020 Army Installation Strategy recognizes the likelihood of impacts as the result of climate change. Damaged infrastructure, loss of testing/training days, health impacts to soldiers and civilian employees, and energy and water demand changes are all identified as potential impacts that can be detrimental to military readiness. The Army Installation Strategy identifies several potential strategic outcomes directly or indirectly affected by climate change. These outcomes include the Army's ability to project combat power, sustain military operations, and modernize its installations. The strategy identifies the need to adapt to climate change impacts by strengthening mission readiness and resilience of the installation.

Army Operational Noise Management Program

The Operational Noise Management Program provides a methodology for assessing the impacts of noise generated by military operations. This program was established by the Department of the Army to assist installations and surrounding communities in developing guidelines for land use planning to mitigate noise and other hazards to the public while protecting the military's mission(s) at an installation. This program encourages compatibility measures by both the U.S. Army and surrounding communities through the development of an Operational Noise Management Plan (ONMP). The *Operational Noise Management Handbook*, completed in November 2005, guides the development of ONMPs.

The *Operational Noise Manual* provides a practical reference for military and civilian personnel with duties and responsibilities in operational noise management. The manual assists personnel in understanding and implementing current DoD environmental policy and guidance. Most of the manual is devoted to five subjects: characteristics of sound, effects

of noise, military noise sources, noise monitoring, and the reduction of noise conflicts.

Army Regulation 200-1, Environmental Protection and Enhancement

This regulation implements federal, state, and local environmental laws and DoD policies for preserving, conserving, and restoring the environment. This regulation should be used in conjunction with 32 Code of Federal Regulation (CFR) Part 651, which defines Army policy regarding National Environmental Policy Act (NEPA) requirements and supplemental program guidance.

Army Regulation 200-1 also defines the Army Environmental Management System framework and five interconnected management domains: (a) policy, (b) planning and implementation, (c) program management and operation, (d) checking and corrective action, and (e) management review. Like other resource conservation and protection measures, 200-1 requirements can result in land use restrictions at Army installations.

Army Regulation 200-4 Cultural Resources Management

This regulation specifies the requirement for Army facilities to establish an Integrated Cultural Resources Management Plan that outlines management practices for cultural resources.

Building Resilient Infrastructure and Communities (BRIC)

BRIC is a Federal Emergency Management Agency grant. BRIC will support states, local communities, tribes, and territories as they

Existing Planning & Compatibility Tools

undertake hazard mitigation projects, reducing the risks they face from disasters and natural hazards. The BRIC program guiding principles are supporting communities through building capability and capacity, encouraging and enabling innovation, promoting partnerships, enabling large projects, maintaining flexibility, and providing consistency.

Clean Air Act (CAA)

The CAA is the comprehensive federal law that regulates air emissions from stationary and mobile sources to manage air pollution. Under the CAA, the Environmental Protection Agency (EPA) is the principal federal agency responsible for air quality management in the United States (U.S.). Under this authority, the EPA sets ambient air quality standards and oversees related planning, permitting, compliance, and enforcement.

The CAA gives the EPA the authority to limit emissions of air pollutants originating from sources such as chemical plants, utilities, and steel mills. Under the CAA, the EPA establishes limits for six criteria pollutants using National Ambient Air Quality Standards (NAAQS) that limit exposures to help ensure public health and welfare. Individual states may have more stringent air pollution laws, but they may not set standards lower than the EPA's. The law requires each state to develop a state implementation plan (SIP) that outlines how it will control air pollution under the CAA.

In addition to the NAAQS for criteria pollutants, national standards exist for hazardous air pollutants (HAPs), which are regulated under Section 112(b) of the 1990 CAA amendments. The National Emission Standards for Hazardous Air Pollutants regulate HAP emissions from stationary sources (40 CFR Part 61).

Clean Water Act (CWA)

The CWA governs the management of water resources and controls and monitors water quality with the goal of restoring the chemical, physical,

and biological integrity of waters in the U.S. The CWA establishes national policy goals for eliminating the release of toxic substances and other sources of water pollution to ensure that surface waters meet human and environmental health standards. The act also authorizes funding and other assistance to states to offset the capital costs of management infrastructure and to support water quality monitoring efforts. The CWA is implemented primarily by the EPA.

National Pollutant Discharge Elimination System (NPDES)

Created by the CWA, the NPDES program controls water pollution by using rigorous permitting processes to regulate point sources that discharge into U.S. waters. Point sources are discrete conveyances such as pipes, man-made ditches, and individual homes that are connected to a municipal system, have a septic system, or do not create surface discharge needing a NPDES permit. However, industrial, municipal, and other facilities must obtain permits if they discharge directly to surface waters. Many permitting, enforcement, and administrative functions of the NPDES are operated by state governments to enhance program efficiency and scope.

Comprehensive Environmental Response, Compensation, and Liability Act

This law was designed to assist in the cleanup of sites with hazardous contaminants, responding directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. The Comprehensive Environmental Response, Compensation, and Liability Act has relevance as a potential Compatible Use Plan tool through the Superfund environmental program, established to address hazardous waste sites. Hazardous waste is sometimes present in or around military installations, particularly where munitions and ordnance are stored and used for training purposes. If



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not disposed of properly, such material could be harmful to the installation's tenants and surrounding communities. While the Superfund cleanup process may be complex, it protects communities and the environment from further contamination.

Department of Energy Office of Energy Efficiency and Renewable Energy

The DOE Office of Energy Efficiency and Renewable Energy is responsible for developing and delivering market-driven solutions for energy-saving homes, buildings, and manufacturing; sustainable transportation; and renewable electricity generation.

The DOE's Wind Program funds research and development in wind power technology and evaluates market barriers such as environmental impacts, project siting, permitting processes, and the potential effects of wind energy development on U.S. airspace and waterways. The program also assesses domestic wind energy potential, serves as a technical information resource, assists in the development of wind farm siting and permitting guidelines, and helps to develop testing centers for wind energy equipment.

The DOE's Solar Power Program funds research for developing and delivering innovative solar power technology that can compete with other sources of energy. Much of the research supports photovoltaic and solar thermal technologies that can be used to convert sunlight into energy.

Department of Housing and Urban Development Noise Regulation

HUD has instituted policies through Section 24 CFR Part 51 that promote the creation of controls and standards by state and local governments for community noise abatement. The goal of these regulations is to

reduce noise levels within residential developments that are funded by HUD. The policies include the following.

- A requirement that noise exposure and sources of noise be given adequate consideration as an integral part of urban environments in connection with all HUD programs that provide financial support to planning;
- Withholding HUD assistance for the construction of new dwelling units on sites which have, or are projected to have, unacceptable noise exposure, are in runway Clear Zones, or constitute incompatible uses in Accident Potential Zones;
- Encouragement for modernizing existing buildings in noise environments; and
- Grants and allowances that support state and local government efforts to provide acoustical privacy in multifamily dwellings through building design and acoustical treatments.

DoD Conservation Partnering Initiative

In 2003, Congress amended Title 10 USC §2684a and §2692a (Public Law 107 314), the National Defense Authorization Act, authorizing the DoD to partner with other federal agencies, state and local governments, and conservation-based, nongovernmental organizations in setting aside lands near military bases for conservation and in preventing incompatible development from encroaching on and interfering with military missions. This law constitutes an additional tool for supporting conservation and environmental stewardship on and off military installations.

DoD Defense Community Infrastructure Program

Piloted in 2019, the Defense Community Infrastructure Program allows DoD to provide funding to state and local governments for off-base infrastructure projects to support military installations. The program authorizes the DoD to fund projects that address deficiencies in community infrastructure, if the assistance will enhance the value of the military, its resilience, or the quality of life of military families.

Eligible community infrastructure projects are any complete and useable transportation project; community support facilities (e.g., school, hospital, police, fire, emergency response); and utility infrastructure projects (e.g., water, wastewater, telecommunications, electric, and gas, with necessary cyber safeguards) that:

- Are located off a military installation;
- Support a military installation;
- Are owned by a state or local government or a not-for-profit, member-owned utility service;
- Will enhance military value, military installation resilience, or military family quality of life at the supported military installation (definitions of these enhancements are provided in Section E, paragraph 1. of the Notice of Funding Opportunity);
- Are endorsed by the local installation commander representing the installation benefitting from the proposed project; and
- Are where ground-disturbing work has not yet commenced but is construction ready.

DoD Directive 4170.11 Installation Energy Management

Directive 4170.11 requires that installation energy management meet applicable goals and policies and that:

- Utility infrastructure be secure, reliable, and efficient;
- Utility commodities be procured effectively and efficiently; and
- Energy and water conservation efforts be maximized.

The availability, reliability, and security of electrical, water, and fuel resources and supporting infrastructure are critical for installation resiliency and continuity in case of events driven by climate change or other impacts.

DoD Directive 4715.21 Climate Change Adaptation and Resilience

This directive provides DoD policy on adapting current and future military operations to address climate change impacts on mission planning and execution. Key elements of the directive are:

- Identify and assess effects of climate change on DoD mission;
- Account for climate change effects when developing plans and procedures; and
- Anticipate and manage risks associated with climate change to ensure resilience.



DoD Instruction 4715.03 Natural Resource Conservation Program

This DoD instruction provides guidance for compliance with federal, state, and local regulatory requirements for the integrated management of natural resources on DoD land. The Instruction specifies that those DoD components that are responsible for natural resources management shall also ensure that installations prepare an Integrated Natural Resources Management Plan.

DoD Instruction 4715.16

This DoD Instruction provides guidance for compliance with federal regulatory requirements for integrated management of cultural resources on DoD land. Cultural resources include historic, archaeological, architectural, and cultural values.

DoD Military Aviation and Installation Assurance Siting Clearinghouse

Section 358 of the 2011 National Defense Authorization Act requires the DoD to study the potential effects of proposed structures on military installations and operations. The Military Aviation and Installation Assurance Siting Clearinghouse (formerly the Energy Siting Clearinghouse) coordinates the review of energy project applications. Key elements of Section 358 include designating a senior official and lead organization to conduct the review of energy project applications, a 30-day timeframe for completing a hazard assessment associated with an application, and specific criteria for DoD objections to projects. Section 358 also requires the DoD to provide an annual status report to Congress. This legislation promotes the ongoing development of renewable energy sources and increased resiliency of the commercial

electrical grid, while minimizing or mitigating any adverse impacts on military operations and readiness.

The 2018 National Defense Authorization Act mandated that the Military Aviation and Installation Assurance Siting Clearinghouse must define clear procedures for energy project developers to consult with affected military installations, in order to facilitate better coordination and communication from initiation through completion of projects.

The new Clearinghouse must also develop procedures that allow energy project developers to submit the parameters of a project area and the specifications of a preliminary layout at least one year before they plan to begin construction. Such procedures will allow the DoD to determine whether a proposed energy project is within any DoD-operated surveillance radar area or Military Training Route. These procedures will help set a more clearly defined trigger for coordination and outreach between affected military installations and developers.

Additionally, the Clearinghouse's review period upon receiving an energy project application from the Secretary of Transportation has been extended from 30 to 60 days, allowing the Clearinghouse and affected military installations more time to assess the potential adverse impacts of proposed developments.

This legislation establishes procedural certainty and a predictable process for promoting compatibility between alternative energy development and military capability.

DoD Antiterrorism Standards

Antiterrorism standards authorize commanders at all levels to enforce security measures and make them responsible for protecting persons and property under their control. Numerous UFC guidance publications outline various fencing and security measures appropriate for military installations. The following are UFC criteria applicable to security engineering:

Existing Planning & Compatibility Tools

- 4-022-01 Security Engineering: Entry Control Facilities/Access Control Points, 2005
- 4-010-01 DoD Minimum Antiterrorism Standards for Buildings
- 4-020-01 Security Engineering: Facility Planning Manual
- 4-022-02 Security Engineering: Design and Selection of Active Vehicle Barriers
- 4-022-03 Security Fences and Gates
- 3-530-01 Design: Interior, Exterior Lighting, Security Lighting, and Controls

The Military Handbook (MIL HNDBK 1013/10) *Design Guidelines for Security Fencing, Gates, Barriers, and Guard Facilities* indicates that installations should use signage at 200-foot intervals on the exterior installation fencing to inform and warn potential trespassers that there is a U.S. military installation at the location. All the military services recognize the importance of a secured installation, but only the U.S. Navy has published specific guidelines for the installation of warning/no trespassing signs.

DoD Operational Management Noise Program

The Operational Noise Management Program provides a methodology for assessing the impacts of noise generated by military operations. This program was established by the Department of the Army to assist installations and surrounding communities in guiding land use planning to mitigate noise and other hazards to the general public, while ensuring the sustainability of the military's mission(s) at an installation. This program encourages both the U.S. Army and surrounding communities to implement compatibility measures through the development of an ONMP.

Noise assessment is the cornerstone of an ONMP. Noise levels are classified by zone based on average and peak noise emission levels that

can be used to develop land use plans and to protect the public. The three noise zones developed to identify and address noise-sensitive land uses are:

- Zone I – Noise that occurs in Zone I is compatible with most noise-sensitive land uses, such as housing, schools, and medical facilities. It includes a Land Use Planning Zone as a buffer for noise between Zones I and II.
- Zone II – Noise occurring in Zone II is generally incompatible with most noise-sensitive land uses.
- Zone III – Noise occurring in Zone III is incompatible with all noise-sensitive land uses.

The Army's Operational Noise Manual, completed in November 2005, provides guidance for developing an ONMP. The Operational Noise Manual provides a practical reference for military and civilian personnel with duties and responsibilities in operational noise management. The manual assists personnel in understanding and implementing current DoD environmental policy and guidance. Most of the manual focuses on the characteristics of sound, the effects of noise, military noise sources, noise monitoring, and the reduction of noise conflicts.

DoD Readiness and Environmental Protection Integration Program

The DoD established the REPI program to implement authority granted through the DoD Conservation Partnering Initiative. This initiative enables the DoD to work with state and local governments, nongovernmental organizations, and willing landowners to limit encroachment by protecting undeveloped land that provides a buffer around installations to ensure mission sustainability.

REPI funds are used to support a variety of DoD partnerships that promote compatible land use. By relieving encroachment pressures, the



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military can test and train in a more effective and efficient manner. Additionally, by preserving the land surrounding military installations, the funds help to conserve and protect habitats for plant and animal species.

Endangered Species Act

The Endangered Species Act of 1973 established a program for the conservation of threatened and endangered plants and animals and their habitats. Under the ESA, species may be listed as either endangered or threatened.

When a species is proposed for listing as endangered or threatened under the ESA, the U.S. Fish and Wildlife Service (USFWS) must consider whether there are areas of habitat believed to be essential to species conservation. These areas may be proposed for designation as "critical habitat." A critical habitat designation does not necessarily restrict further development; it is a reminder to federal agencies that they must make a special effort to protect the important characteristics of these areas.

The ESA requires federal agencies to ensure that actions that they "authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species."

Federal Aviation Act

The Federal Aviation Act was passed in 1958 to oversee and regulate civilian and military use of airspace. The Act requires the Secretary of Transportation to make long-range plans that include policies for the orderly development and use of navigable air space in order to serve both civilian aeronautics and national defense needs. The Act further authorized the FAA to manage airspace over the United States. The primary objectives of the FAA are to promote air safety and the efficient use of navigable airspace.

Federal Aviation Regulation Part 77

The Federal Aviation Act is largely implemented through Title 14 CFR Part 77, which provides standards for determining whether a proposed structure or object will create a vertical obstruction or flight hazard in navigable airspace. Local jurisdictions can use a formula provided in the regulation to assess proposed developments relative to height restrictions near airfields. The FAA uses its Obstruction Evaluation/Airport Airspace Analysis tool to make Determinations of Hazards/No Hazards for proposed structures or objects.

Part 77 defines an obstruction to air navigation as an object that meets one or more of the following conditions:

- A height of 499 feet above ground level (AGL).
- A height that is 200 feet AGL or 200 feet above the established airport elevation, whichever is higher, and within three nautical miles of the established reference point of an airport that has a runway at least 3,200 feet long. Heliports are excluded from these criteria. The height criterion increases 100 feet for every additional nautical mile from the airport, up to a maximum of 499 feet.
- A height within a terminal obstacle clearance area, including initial approach segments, departure areas, and circling approach areas, which would result in the vertical distance between any point on the object and an established minimum instrument flight altitude within that area or segment to be less than the required clearance.
- A height within an enroute obstacle clearance area of a federal airway or approved off-airway route, including turn and termination areas, that would increase the minimum obstacle clearance altitude.
- The surface of a takeoff and landing area of an airport, or of any imaginary surface established under 14 CFR 77.19 and 14 CFR 77.21, as well as heliports (14 CFR 77.23). However, no part of the takeoff or landing area will be considered an obstruction.

- Except for traverse ways on or near an airport with an operative ground traffic control service furnished by an airport traffic control tower or by the airport management and coordinated with the air traffic control service, the standards apply to traverse ways used or to be used for the passage of mobile objects only after traverse way heights are increased by the following:
 - 17 feet for an interstate highway that is part of the National System of Military and Interstate Highways where overcrossings are designed for a minimum of 17-foot vertical distance
 - 15 feet for any other public roadway
 - 10 feet or the height of the highest mobile object that would normally traverse the road, whichever is greater, for a private road
 - 23 feet for a railroad
 - For a waterway or any other traverse way not previously mentioned, an amount equal to the height of the highest mobile object that would normally traverse it

When the FAA identifies obstructions, it may require proposed developments to be altered to avoid creating obstructions and/or minimize their potential impacts. Additional information on Part 77 can be found on the FAA website at <http://www.faa.gov/>.

FAA 5G Guidance

Radio altimeter interference from 5G, specifically C-band, communications infrastructure is a documented aviation safety risk. Interference from 5G communications towers can interfere with radio altimeters. This presents a particular safety of flight risk to aircraft control systems that are reliant on radio altimeters. The FAA is actively working with both the aviation industry and communications industries to mitigate this risk by retrofitting aircraft with improved radio altimeters that filter out 5G spectrum interference and limiting full 5G

infrastructure implementation until this risk can be fully mitigated. The FAA has issued a Notice to Air Missions to advise pilots to use alternative methods of compliance for use around certain airports for any aircraft not cleared for operation in 5G environments.

The FAA has issued airworthiness directives (AD) for aircraft equipped with a certain flight control system. This AD was prompted by a determination that radio altimeters cannot be relied upon to perform their intended function if they experience interference from wireless broadband operations in the 3.7-3.98 GHz frequency band (5G C-Band), and a recent determination that, during the approach, landings, and go-arounds, as a result of this interference, certain systems may not properly function, resulting in increased flight crew workload while on approach with the flight director, auto throttle, or autopilot engaged, which could result in the reduced ability of a flight crew to maintain safe flight and landing. This AD requires revising the limitations and operating procedures sections of the existing flight manual to incorporate specific operating procedures for instrument landing system approaches, speed brake deployment, go-arounds, and missed approaches when in the presence of 5G C-Band interference.

FAA Guidance on Drone Operations

The FAA governs unmanned aerial systems (UASs), commonly known as drones, in the national airspace. Drone operations for small UAS aircraft, defined as under 55 pounds, can be conducted under the Small UAS Rule (Title 14 CFR Part 107), which requires operator certification, among other UAS regulations. Recreational use of small UAS aircraft is permitted by 49 USC § 44809 as an exception to Part 107 provided the operator follows the eight requirements of this exception, which include registration of UAS vehicles. This exception is sometimes referred to as the Recreational Use of Model Aircraft Rule.



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FAA Small Unmanned Aerial Systems

Title 14 CFR Part 107 specifies operating requirements for all UASs under a weight of 55 pounds. This includes manually operating the UAS, maintaining a visual line of sight, and getting approval from the relevant air traffic control tower before operating in Class B, C, D, and E airspace using the Low Altitude Authorization and Notification Capability desktop or mobile app. It also sets operational limitations, including a weight limit of 55 pounds, a speed limit of 100 miles per hour, a height limit of 400 feet, and daylight operations only. UAS operators are required to pass a remote pilot certification exam and UASs must be registered with the FAA. Certified UAS operators can request waivers to operational requirements including altitude, special use airspace, and night flying. Exceptions under the Recreational Use of Model Aircraft Rule require registration of small UASs with the FAA, marking the aircraft with the registration number, and personally carrying the registration while operating the UAS.

FAA UAS Registry

All UASs operating in the national airspace are required to be registered with the FAA at its Drone Zone website. The only exception made is for model aircraft with weights under 0.55 pounds. The Drone Zone website is <https://faadronezone.faa.gov/#/>.

The FAA may take enforcement action against anyone who conducts an unauthorized UAS operation or operates a UAS in a way that endangers the safety of the national airspace system. The FAA enforcement tools include warning notices, letters of correction, and civil penalties.

FAA Guidance to Law Enforcement

The FAA asks local law enforcement agencies to document and provide the following information:

- Identity of operators and witnesses (name, contact information);
- Type of operation (hobby, commercial, public/governmental);

- Type of device(s) and registration information (number/certificate);
- Event location and incident details (date, time, place); and
- Evidence collection (photos, video, device confiscation).

Additionally, the FAA recommends that law enforcement always follow agency policies and take appropriate action based on the facts and circumstances of the incident and area-specific laws and rules. FAA enforcement action does not affect any enforcement action(s) taken by local law enforcement.

Local ordinances that may apply include, but are not limited to, reckless endangerment, criminal mischief, voyeurism, and inciting violence.

Federal Land Policy and Management Act of 1976

The Federal Land Policy and Management Act established the authority of public agencies that possess public lands to manage and plan according to national and local interests. The law mandates that public lands identified for development shall uphold and protect the scientific, scenic, historical, ecological, environmental, and other values unique to specific areas. This law provides the impetus for various resource management plans developed and prepared for public agencies.

Intergovernmental Support Agreements

Intergovernmental Support Agreements (IGSAs) are formal public-public partnerships between the military and state or local governments. The purpose of IGSAs is to provide, receive, or share installation support services. IGSAs can create efficiencies for the military to enhance mission readiness and are an effective partnering strategy. The IGSA statute (10 USC § 2679) authorizes such agreements based on a determination that they will serve the best interests of the department by creating efficiencies or economies of scale, including by reducing

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costs or by enhancing mission effectiveness. The law also states that IGSA's are not subject to other provisions of law governing the award of federal government contracts for goods and services. In addition, IGSA's may be entered into with a state or local government on a sole-source basis and may use wage rates normally paid by that state or local government.

At the same time, there are limitations on the use of IGSA's. Specifically, any installation services obtained through an IGSA must already be provided by the state or local government for its own use, and any contract awarded by the federal government or by a state or local government pursuant to an IGSA must be awarded competitively. In addition, IGSA's cannot be used to circumvent the requirements of Office of Management and Budget Circular A-76, which governs competitions to determine whether commercial activities should be performed by government employees or by private contractors. Finally, IGSA's are statutorily limited to a term of no more than 10 years, but the statute does not preclude their renewal after the initial agreement period ends.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 USC 703-712) was established in 1918 along with Canada, Mexico, Japan, and Russia to protect migratory bird species. The Act prohibits killing, capturing, and transporting protected migratory bird species without Department of Interior authorization. The presence of protected migratory birds in air operational areas could delay and/or impact military operations.

National Environmental Policy Act

NEPA established U.S. policy promoting the protection and enhancement of the environment in 1970. It requires federal agencies to identify and consider the potential environmental impact of their actions and the actions they fund. NEPA's purpose is to promote informed decision-making by providing detailed information concerning

an undertaking's potential impacts to social, cultural, and economic resources and the environment.

All federal and federally funded undertakings must undergo a NEPA compliance review prior to permitting, approval, and funding. NEPA requirements extend to the military, which must review the potential impacts of proposed actions on the environment, including impacts on resources in surrounding civilian communities, and consider measures to reduce, avoid, or mitigate adverse effects. Actions may require a full Environmental Impact Statement (EIS) or, if significant impacts are unlikely, a less comprehensive Environmental Assessment that supports a Finding of No Significant Impact prior to project initiation. Federal agencies can define certain types of undertakings that are known to have no independent or cumulative impacts on the human environment as categorical exclusions and therefore exempt from assessment requirements.

NEPA documents can serve as valuable planning tools for local planning officials. Environmental Assessments (EA) and Environmental Impact Statements (EIS) identify the potential impacts of changes in military actions or operations, including effects on local policies, plans, and programs and on the surrounding community more generally. EISs further result in Records of Decision that explain decisions to pursue or modify proposed projects due to their impacts, describe all alternatives considered, and outline any mitigation and monitoring plans.

National Historic Preservation Act

Compatibility issues and associated mitigation strategies have been developed based on the NHPA of 1966, which requires federal agencies and the military to consider the impacts of a proposed action on cultural resources that are listed or eligible for listing on the National Register of Historic Places, in order to mitigate any negative effects. It is typically easiest to avoid the immediate area in which historic properties are found, limiting the amount of land that is available for development but often in negligible ways. Because the presence of



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historic properties may constrain or require modifications to development plans, cultural resources and any needed compliance actions should be identified early in the planning process.

Noise Control Act of 1972

The Noise Control Act of 1972 acknowledges that inadequately controlled noise has the potential to endanger health and quality of life and states that all Americans are entitled to an environment free from excessive noise. When the Act was being developed, military installations were experiencing the impacts of urban encroachment in the form of increased community complaints about operational noise. The Noise Control Act is important in driving the mitigation of compatibility concerns about military-related noise due to increased populations near military installations. As communities grow, it is important that the military installation, developers, and affected communities work together to implement the act through zoning codes and standards that restrict noise-sensitive development in high-noise areas or otherwise limit military-related noise impacts on civilians.

Safe Drinking Water Act

The Safe Drinking Water Act is the main federal law that ensures the quality of drinking water in the United States. The Act authorizes the EPA to set national health-based drinking water standards to protect against both naturally occurring and man-made water contaminants. The Act applies to every public water system in the U.S.

Sentinel Landscapes

The USDA, DoD, and DOI established the Sentinel Landscapes Partnership in 2013. The Sentinel Landscapes Partnership has five primary goals:

- Strengthen military readiness
- Conserve natural resources
- Bolster agricultural and forestry economies
- Increase public access to outdoor recreation opportunities
- Increase climate change resilience.

In this collaboration, the federal agencies work with state, local, and private partners to preserve and restore natural lands important to the nation's defense mission. By promoting land use around military installations that is compatible with the national defense mission, the program helps ensure that installations remain viable by sustaining their testing, training, and operational missions. Private landowners assist with the implementation of sustainable management practices on their lands.

Sustainable Range Program

Encroachment on Army training and firing ranges has become a major concern in recent years. Pressure from urbanization, environmental protection efforts, and competition for airspace and electromagnetic frequencies has limited mission capabilities and operations at installations nationwide. Furthermore, open ranges are increasingly becoming islands of biodiversity amid urban development. These concerns, in addition to public nuisances such as smoke and noise, have led to apprehension about the nature and use of military ranges.

The SRP is the Army's overall approach to improving the design, operation, use, and management of its ranges to ensure their long-term

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sustainability. The SRP's core programs are the Range and Training Land Program and the Integrated Training Area Management Program, which focus on the optimal use and capability of the Army's ranges and training land. To ensure the accessibility and availability of Army ranges and training land, the SRP core programs are integrated with the facilities management, environmental management, munitions management, and safety program functions supporting optimal use and capability.

Telecommunications Act of 1996 and the Federal Communications Commission

The Telecommunications Act of 1996 was the first comprehensive update to a federal telecommunication law in over 60 years and was in large part intended to open the marketplace to greater competition. The increasing use and development of personal mobile phones, satellite transmission, high-speed fiber optics, and related technologies threaten to raise demand for telecommunications beyond system capacity.

New telecommunication tower siting requires compliance with the FCC's environmental standards and procedures (including NEPA and Endangered Species Act compliance), NHPA compliance, adherence to applicable FAA requirements, and structure registration with the FCC. The actual approval of telecommunication improvements is subject to state and local permitting and review, but state and local authority is limited by federal law. For instance, states and local jurisdictions cannot base their decisions on any purported environmental effects of radio frequency transmissions.

Sikes Act

Sikes Act requires the DoD to develop and implement Integrated Natural Resources Management Plans (INRMPs) for military installations across the country. INRMPs are prepared in cooperation with the USFWS and

state fish and wildlife agencies to ensure proper consideration of fish, wildlife, and habitat needs. The Sikes Act requires INRMPs to be reviewed at least every five years in collaboration with the USFWS and corresponding state agencies. Army Regulation 200-1, Environmental Protection and Enhancement, and policy memoranda guide the implementation of the Sikes Act.

Management protocols in INRMPs can impact operations at installations by restricting where the military can conduct certain exercises in order to meet its environmental stewardship obligations.

USDA Wildfire Crisis Strategy

Wildfires have become larger, longer lasting, and more destructive over the past 20 years. Growing wildfire risk is due to accumulating fuels, a warming climate, and expanding development at the wildland-urban interface. In response, the U.S. Forest Service, a USDA agency, is establishing a strategy for working with partners to dramatically increase fuel and forest health treatments by up to four times current treatment levels in the west. Under this strategy, the Forest Service is working with partners to engineer a paradigm shift by focusing on fuels and forest health treatments more strategically and at the scale of the problem, using the best available science as the guide.

The strategy builds on the National Cohesive Wildland Fire Management Strategy, including efforts to create fire-adapted communities and other collaborative strategies for cross-boundary treatments, such as Cohesive Strategy projects and Shared Stewardship agreements. The USDA will work collaboratively with states, tribes, local communities, private landowners, and other stakeholders to adapt lessons learned into a coordinated and effective program of work.



4.2 State of Utah Legislation and Programs Relevant to Military Compatibility

Plans and programs that originate at the state level provide further assistance with development planning and the protection of lands in the State of Utah. The tools authorize or mandate local counties and cities to provide for the protection of the state's valuable industries, including the military. In addition, the state's tools require communities and developers to protect and preserve the state's natural resources, including land and water, through regulatory measures that are intended to provide a sustainable water supply.

Utah has a history of collaboration with the military; at times, compatibility requires legislation to ensure notification, awareness, and review that are inherent in the development process. Compatible growth is related to military training and balanced growth. This section summarizes the legislation and programs that support collaboration, including legislation that ensures notification, awareness, and review processes that are integral to compatible development.

The following subsections summarize key statutes that guide community development and coordination with Utah's military installations.

Military Installation Development Authority Act (MIDA)

MIDA is an "authority" created by the Utah Legislature to facilitate the development of military land in Utah, bringing together private and public enterprise and promoting military initiatives. It serves a dual role of helping strengthen the military presence in Utah while stimulating the state's economy.

The 2002 National Defense Authorization Act included authority for the military services to offer underutilized land to private developers through a competitive process called an Enhanced Use Lease (EUL). With Congress authorizing this innovative program to create new infrastructure on military installations and bases, the State of Utah decided to use the EUL authority to create MIDA, whose purpose is to help revitalize infrastructure and more strongly support the military mission in Utah.

Private entities develop the land for commercial purposes, and in exchange the military collects payments that can be used to construct additional buildings and infrastructure for the installation. This public-private partnership ultimately supports the military's mission, drives economic development and new jobs in the region, and mitigates the risk of base closure.

2019 State Hazard Mitigation Plan

The purpose of the State Hazard Mitigation Plan (SHMP) is to identify risks that natural hazards pose throughout the state and potential impacts on citizens and infrastructure. The SHMP provides updates on the state's progress of building resilience through mitigation.

The 2019 SHMP envisions Utah as a safe, resilient state capable of recovering from a natural disaster. The mission is to improve understanding of the state's risks and vulnerabilities to natural hazards, to provide guidance to state and local agencies in using comprehensive mitigation strategies to increase resiliency, to significantly reduce potential casualties and physical damage, and to limit social, economic, and environmental disruptions.

The Utah Department of Emergency Management is the state's designated coordinating agency for disaster preparedness, emergency response and recovery, and hazard mitigation. The Utah SHMP is intended to guide and direct the state's mitigation efforts to reduce or

eliminate the impact of identified hazards on life, property, and the environment.

The SHMP promotes mitigation strategies to deal with identified risks. Additionally, the SHMP fulfills federal and local hazard mitigation planning responsibilities. The plan is an aid in informing state officials, agencies, and the public on the latest threats to human life and property. It also documents mitigation projects, goals, and strategies to spotlight what local jurisdictions are doing throughout Utah to prevent or reduce hazard vulnerability and risk. The SHMP addresses flooding, wildland fire, landslide, earthquake, drought, severe weather, and infestation.

Mountainland Pre-disaster Hazard Mitigation Plan 2017

The purpose of the Mountainland Pre-disaster Hazard Mitigation Plan is to fulfill federal, state, and local hazard mitigation planning responsibilities; to promote pre- and post-disaster mitigation measures; to implement strategies that minimize suffering, loss of life, and property damage from hazardous conditions; and to eliminate or minimize conditions that would have an undesirable impact on Utah. This plan enhances public and agency awareness of the threat posed by hazards and of actions that can be taken to meet the threat. Natural hazards addressed are flooding, wildland fire, landslide, earthquake, drought, severe weather, and infestation.

Utah Department of Environmental Quality

Air Quality

New Source Review (NSR) Program

The Utah Department of Environmental Quality enforces the EPA's NSR program, which is a Clean Air Act program that requires industrial facilities to install modern pollution control equipment when they are built or when making a change that increases emissions significantly. The program accomplishes this when owners or operators obtain permits limiting air emissions before they begin construction. For that reason, NSR is commonly referred to as the "preconstruction air permitting program." NSR permits are issued by state or local air pollution control agencies.

EPA sets NAAQS for six principal pollutants, which are commonly called "criteria" pollutants and include: ozone, carbon monoxide, particulate matter, sulfur dioxide, lead, and nitrogen oxide. The NAAQS are set at levels that protect human health and the environment.

For each criteria pollutant, every area of the United States has been designated as one of the following categories:

- Attainment: air quality is equal to or better than the level of the NAAQS; these areas must maintain clean air.
- Unclassifiable: there are no data on air quality for the area; the area is treated as attainment.
- Nonattainment: air quality is worse than the level of the NAAQS; these areas must take actions to improve air quality and attain the NAAQS within a specified period.

The purpose of the NSR program is to protect public health and the environment, even as new industrial facilities are built and existing ones expand. Specifically, its purpose is to ensure that air quality:



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- Does not worsen where the air is currently unhealthy to breathe (in nonattainment areas); and
- Is not significantly degraded where the air is currently clean (in attainment areas).

This rule implements the federal nonattainment area permitting program for major sources as required by 40 CFR 51.165. In addition, the rule contains new source review provisions for some non-major sources in PM10 nonattainment areas. This rule, R307-403-5(1), supplements, but does not replace, the permitting requirements of R307-401.

NSR permits are issued by state or local air pollution control agencies. State and local air pollution control agencies may have developed their own NSR permit programs as part of their State Implementation Plans (SIPs).

R307-204

The purpose of R307-204 is to establish, by rule, procedures that mitigate the impacts on air quality and visibility from prescribed fire.

State Implementation Plan

The SIP includes goals and objectives for reducing air pollutant emissions from mobile sources for the Wasatch Front Urban Areas. The Clean Air Act of 1970 required the establishment of NAAQS to protect the public health and welfare. In response to that requirement, the EPA promulgated NAAQS for seven pollutants: total suspended particulate, sulfur dioxide, carbon monoxide, hydrocarbons, ozone, nitrogen dioxide, and lead. The Act also required each state to prepare and submit an SIP to attain, maintain, and enforce the NAAQS.

The following sections of the SIP are implemented by administrative rules:

- Ambient Air Monitoring Program
- Analysis of Plan Impact
- Comprehensive Emission Inventory

Utah Air Conservation Act

The Utah Air Conservation Act is part of Title 19–Environmental Quality Code. The purpose of the Act is to achieve and maintain levels of air quality which will protect human health and safety, and to the greatest degree practicable, prevent injury to plant and animal life, preserve property, foster the comfort and convenience of the people, promote the economic and social development of the state, and facilitate the enjoyment of Utah’s natural attractions. Local and regional air pollution control programs shall be supported to the extent practicable as essential instruments to secure and maintain appropriate levels of air quality. The purpose of this Act is to:

- Provide for a coordinated statewide program of air pollution prevention, abatement, and control;
- Provide for an appropriate distribution of responsibilities among the state and local units of government;
- Facilitate cooperation across jurisdictional lines in dealing with problems of air pollution not confined within single jurisdictions; and
- Provide a framework within which air quality may be protected and consideration given to the public interest at all levels of planning and development in the state.

Water Quality

401 Water Quality Certification Program

The purpose of the 401 Water Quality Certification program is to ensure that federally permitted or licensed activities (such as 404 permits issued by the U.S. Army Corps of Engineers) will be conducted in a manner that will comply with applicable Utah discharge and water quality requirements in order to maintain the chemical, physical, and biological integrity of waters affected by the project.

Southern Utah Reuse Grant Program

During the 2022 session, the legislature appropriated \$15 million in federal American Rescue Plan Act (ARPA) funding appropriations for “wastewater reuse projects in Southern Utah with priority for projects that mitigate the impacts of drought on rural communities and the agricultural sector.” The Water Quality Board has established that any reuse project located in the Central, Southeastern, and Southwest districts will be considered for funding, excluding any projects located in the Great Salt Lake watershed.

Utah Lake Preservation Fund Grant Program

During the 2022 session, the Utah legislature created the \$30 million Utah Lake Preservation Fund using ARPA funds. The Utah Division of Water Quality is administering the program for Utah Lake water quality projects.

The legislature describes the Utah Lake Preservation Grant Program as a “Competitive grant program to fund water quality improvements in Utah Lake and its watershed including wastewater upgrades (beyond current requirements), stormwater improvements, agricultural nonpoint source as well as in-lake water quality improvements.”

The following six general project categories are eligible for funding:

- Wastewater Infrastructure
- Stormwater Infrastructure
- Nonpoint Source Projects including Agricultural
- Stormwater Best Management Practices
- Nonpoint Source Information and Education
- In-lake Water Quality

State of Utah Emergency Operations Plan

The State of Utah, in accordance with Utah Code Annotated Section 532, Emergency Management Act, is required to prepare for, respond to, and recover from emergencies or disasters with the primary objectives to save lives and protect public health and property.

Utah’s threat environment includes not only the traditional spectrum of man-made and natural hazards—wildland and urban fires, floods, oil spills, hazardous material releases, pandemics, drought, and disruptions to energy and information technology infrastructure—but also the terrorist arsenal of chemical, biological, radiological, nuclear, and high-yield explosive weapons.

The State of Utah Emergency Operations Plan (EOP) addresses the consequences of any emergency, disaster, or incident, up to and including catastrophic, in which there is a need for state resources in providing prevention, preparedness, response, and recovery assistance activities. It is applicable to natural disasters such as floods, heat, and earthquakes, technological emergencies involving hazardous material releases, and other natural or human-caused incidents, including acts of terrorism.

The State EOP serves as the foundation for the development of detailed state agency plans and procedures to implement response activities in a timely and efficient manner. The goals of the EOP are to:

- Establish a comprehensive, statewide, all-hazards approach to providing consistent incident management and effective, efficient coordination across a spectrum of activities, including prevention, preparedness, response, and recovery;
- Describe state response to, and recovery from, any emergency, disaster, or act of terrorism;
- Organize, assign responsibilities to, and provide planning guidance to state agencies for disaster response/recovery;



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- Provide a fundamental document to test the state's disaster preparedness capabilities and the effectiveness of the plan; and
- Describe state, federal, and private programs for individual and public disaster assistance.

Utah School and Institutional Trust Lands Administration (SITLA)

At statehood, Congress granted land, called trust lands, to Utah with the provision that revenue earned from the sale or lease of the land be placed into permanent endowments for 12 specific institutions: public education, Utah School for the Deaf, Utah School for the Blind, Utah State Hospital, Juvenile Justice Services, Miners' Hospital, University of Utah (UU), Utah State University, Colleges of Education, College of Mines and Earth Sciences at UU, reservoirs, and buildings.

SITLA, created in 1994 by the legislature, administers these trust lands. SITLA manages Utah's 3.4 million acres of trust land, generating revenue through energy and mineral leases, rent, and royalties; real estate development and sales; and surface estate sales, leases, and easements.

SITLA deposits all proceeds into permanent endowments for each beneficiary. Since 1994, SITLA has generated \$1.96 billion in revenue to help grow all permanent funds to \$2.5 billion.

Utah Wildlife Action Plan

Among the 50 states, Utah ranks tenth in overall biological diversity and fifth for endemism (species found only in one state). However, it also ranks fifth in species extinction risk (concentrated mainly among fishes) and seventeenth in actual extinctions. Utah's diversity of species is derived from its physical geography and its geologic history.

The Utah Wildlife Action Plan was developed and written by a broad-based team of diverse stakeholders, nongovernmental organizations, and governmental agencies. The Utah Division of Wildlife Resources compiled and edited the plan. The goal of the Wildlife Action Plan is: "To manage native wildlife species and their habitats, sufficient to prevent the need for additional listings under the Endangered Species Act."

This plan should be viewed as the framework for an inclusive discussion of what the shared priorities and methods should be, focusing on solutions as well as respecting the vital importance of a credible process in creating fair, enduring, satisfying outcomes.

The Wildlife Action Plan guides partnership-driven, landscape-scale conservation work to help maintain the full array of Utah's wildlife and to improve habitat health.

West Traverse Sentinel Landscape Act

The West Traverse Sentinel Landscape Fund's (WTSLF's) purpose is to identify and establish a "buffer" of land around the Camp Williams training area with the vision of being mutually beneficial to Camp Williams and surrounding communities. It helps to mitigate some effects of military training: noise, dust, safety hazards, and fire. The communities benefit by the preservation of open land with compatible use, such as parks, trails, wildlife habitat, erosion control, agriculture, and wildfire mitigation.

The WTSLF coordinating committee has identified 11,314 acres for participation in the program. State funds provide a 25% match. If approved, 2021 General Funds will be used in the amount of \$1.5 million for 330 acres on the south boundary and \$2 million for 330 acres on the north boundary. The 2019 and 2020 legislature appropriated a total of \$2.2 million from the General Fund as a one-time contribution. Money from the General Fund is appropriated to the WTSLF and then channeled from the WTSLF to the program.

4.3 CAS Partnership Community Regulations and Tools

Salt Lake County

County Wildfire Preparedness Plan

The purpose of the Salt Lake County Wildfire Preparedness Plan is to:

- Motivate and empower local government, communities, and property owners to organize, plan, and take action on issues impacting the safety and resilience of values at risk;
- Enhance levels of fire resilience and protection to the communities and infrastructure;
- Identify the threat of wildland fires in the area;
- Identify strategies to reduce risks to structures, infrastructure, and commerce in the community during a wildfire;
- Identify wildfire hazards, education, and mitigation actions needed to reduce risk; and
- Transfer practical knowledge through collaboration between stakeholders toward common goals and objectives.

The outcomes of the Wildfire Preparedness Plan are to facilitate the organization of sustainable efforts to guide planning and implementation of actions through fire adapted communities, resilient landscapes, and safe and effective fire responses. Another outcome is to improve community safety through:

- Coordination and collaboration;
- Public awareness and education;

- Firefighter training;
- Fuel modification;
- Improved fire response capabilities;
- Fire prevention; and
- Development of long-term strategies.

Salt Lake County Emergency Operations Plan

Salt Lake County is required to prepare for, respond to, and recover from emergencies or disasters with the primary objectives to save lives and protect public health and property.

The county's Emergency Operations Plan (EOP) establishes the framework for the effective and comprehensive integration and coordination of the emergency response and recovery actions of all levels of government, volunteer organizations, and the private sector in the county. The EOP is a comprehensive plan that is risk-based and all-hazards in its approach. As such, it is the blueprint for all emergency and disaster operations, including natural disasters, human-caused accidental disasters, and terrorist incidents.

The emergency response and recovery actions undertaken by government agencies and volunteer organizations following a major disaster or emergency will ensure that the follow objectives are met:

- Reduce the vulnerability of citizens and communities to loss of life, injury, damage, and destruction of property during natural, technological, or human-caused emergencies and disasters.
- Prepare for prompt and efficient response and recovery to protect lives and property affected by emergencies and disasters.
- Respond to emergencies using all systems, plans, and resources necessary to preserve the health, safety, and welfare of persons affected by the emergency.



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- Assist communities and citizens of the county in recovering from emergencies and disasters by providing for the rapid and orderly restoration and rehabilitation of persons and property affected by emergencies.
- Provide an emergency management system encompassing all aspects of pre-emergency preparedness and post-emergency response, recovery, and mitigation.

The EOP establishes the fundamental policies, basic program strategies, assumptions, and mechanisms through which to mobilize resources and conduct activities to guide and support local jurisdictions and to seek assistance when necessary from the Utah Division of Emergency Management.

Salt Lake County Resource Management Plan

The County Resource Management Plan (CRMP) is a planning document used to define policy, goals, and objectives for managing natural resources on public lands (defined in Utah Code §63L-6-103) in Salt Lake County. Traditionally, federal agencies (BLM and U.S. Forest Service) are responsible for completing resource management plans for much of the public land in Utah. However, the Utah State Code was amended to require every county in Utah to complete a CRMP addressing all public lands within its jurisdiction. Utah Code §17-27a-4 defines 28 core resources that must be considered in the CRMP “to provide for the protection, conservation, development, and managed use of resources that are critical to the health, safety, and welfare of the citizens of the county and of the state.”

The CRMP serves two important purposes. First, the planning process allows Salt Lake County to assess natural resources that play important roles in the local economy and set goals and objectives for the protection and utilization of those resources. Second, the CRMP provides federal land managers local land use plans that they can consider in their planning processes of public lands.

2020 Stormwater Management Plan

The 2020 Stormwater Management Plan (SWMP) has been developed to meet the requirements of the Utah Pollutant Discharge Elimination System permit and consists of six minimum control measures established by EPA for Phase II stormwater discharges. Implementation of these control measures is designed to minimize the discharge of stormwater pollutants to the maximum extent practicable. Each control measure contains best management practices (BMPs) necessary for proper stormwater management. The BMPs include specific tasks to meet the objective of the related control measure.

This 2020 SWMP identifies tasks for completion over the next five years. These tasks are designed to address the six minimum control measures for Phase I permittees:

- Public Education and Outreach on Stormwater Impacts
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Long-term Stormwater Management in New Development and Redevelopment
- Pollution Prevention and Good Housekeeping for Municipal Operations
- Monitoring, Evaluation and Reporting

2019-2050 Regional Transportation Plan

The Wasatch Front Regional Council is the officially designated Metropolitan Planning Organization for the Salt Lake City–West Valley City and Ogden–Layton urbanized areas and has the responsibility for developing transportation plans for both areas.

The Wasatch Front 2019-2050 Regional Transportation Plan (RTP) is the Salt Lake City–West Valley City and Ogden–Layton fiscally constrained plan for roadways, transit, active transportation, and other facility

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improvements to meet projected travel demand over the next 31 years. Developed in accordance with federal guidelines, the 2019-2050 RTP includes facilities identified by planners, engineers, elected and appointed officials, state agencies and committees, stakeholder groups, special interest groups, and the general public to serve the needs of the Wasatch Front Region.

The 2019-2050 RTP addresses the following:

- Desired local and regional growth and infrastructure
- Maintenance of the existing transportation system
- The regional road system
- Public transportation, including high-capacity transit
- Active transportation networks

The RTP contains the transportation planning details of the Wasatch Choice 2050 Vision. The document details planned transportation investments, the process used to develop the 2019-2050 RTP, the implications for the region, and mechanisms to implement the program.

2019 Salt Lake County Hazard Mitigation Hazard Plan

Salt Lake County and all participating jurisdictions, coupled with their citizens, stakeholders, and partner agencies, prepared this local hazard mitigation plan with the goal of guiding hazard mitigation planning in reducing the casualties and costs of natural disasters by providing comprehensive hazard identification, risk assessment, capability and vulnerability analysis, mitigation strategies, and an implementation schedule. This plan demonstrates the community's commitment to reducing risks from hazards and serves as a tool to help decision-makers direct mitigation activities and resources. This plan was also developed to make Salt Lake County and participating jurisdictions eligible for federal disaster assistance; specifically, the Federal

Emergency Management Agency Hazard Mitigation Grant Program and Pre-disaster Mitigation program, and to earn points for the National Flood Insurance Program's Community Rating System, which could lower flood insurance premiums in participating communities.

The four purposes of this Plan are as follows:

- Identify threats to the community
- Create mitigation strategies to address those threats
- Develop long-term mitigation planning goals and objectives
- Fulfill federal, state, and local hazard mitigation planning obligations

This plan and its implementation will help Salt Lake County and its jurisdictions become better prepared and more resilient communities. The plan was created to prevent or reduce the impacts of disasters.

2015 Salt Lake County Integrated Watershed Plan

This 2015 plan continues the areawide water quality planning process and updates the 2009 plan.

By focusing on the overriding goal of improving watershed functions and providing high-quality surface waters that support the national CWA goals of fishable and swimmable waters, this 2015 plan provides:

- An updated Section 208 plan;
- An updated watershed plan; and
- A road map to guide Salt Lake County's watershed improvements.

The 2015 document integrates the 2009 plan with updated data and information to better address ongoing area-wide water quality planning and watershed planning.

The plan focuses on policies, existing condition assessments, and projects that focus on four watershed functions:



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- Water quality;
- Habitat (terrestrial and aquatic);
- Hydrology (stream bank and stream stability); and
- Social and recreational services.

In addition to addressing the four watershed functions, the county has continued to improve stream conveyances for flood control by increasing flood flow capacity, removing accumulated sediments, and stabilizing stream banks. The plan contains watershed planning elements and recommendations for countywide implementation.

Salt Lake County West General Plan

Salt Lake County West General Plan, the County's plan that encompasses Camp William, was approved on May 10, 2022 by the County Council. The plan addresses general planning needs and variables throughout western Salt Lake County. Incorporated areas have adopted general plans that address community-specific goals and guide growth and development within their own municipal boundaries. The Salt Lake County West General Plan provides a long-range vision and framework for land use and development policies and will serve to protect and enhance the natural resources, customs, culture, and economy of Salt Lake County.

The county's vision for the diverse unincorporated areas in the West General Plan is to plan for:

- Enduring communities
- Vibrant town and village centers
- Employment opportunities
- Preservation of open spaces

The West General Plan includes the following eight elements:

- Land Use

- Housing
- Transportation
- Environment and Conservation
- Water Conservation
- Parks, Trails, and Recreation
- Economy
- Utilities and Public Safety

The West General Plan for Camp Williams, which is a part of the Traverse Mountain Range, indicates an existing and future land use classification, Military (ML). Camp Williams has its own land use authority according to federal regulations.

Salt Lake County Zoning Regulations

Zoning regulations for Salt Lake County are outlined in the Zoning Regulations Title 19. There are 22 districts, including agriculture, single family, multiple family, commercial, industrial, and overlay. Camp Williams is zoned Forestry Recreation (FR-20).

Salt Lake County Subdivision Regulations

Title 16 of the Salt Lake County Code regulates the subdivision of land. The regulations provides standards and procedures for acceptance, processing, hearing, and final action on subdivision and other mapping applications.

Utah County

Utah County General Plan

The Utah County General Plan was revised and adopted on December 30, 2020 by ordinance, with an effective date of February 5, 2021. The plan addresses general planning needs and the overarching goal of a pleasant and progressive county in which people can live and work without sacrificing the traditional rural atmosphere inherent in the unincorporated areas, while protecting the quality of life in incorporated municipalities and respecting the rights of private property owners. As in Salt Lake County, incorporated areas have adopted general plans that address community-specific goals and guide growth and development within their own municipal boundaries.

The General Plan contains five elements, a resource management plan, and a Goshen Valley specific plan. The five elements are:

- Goals, Objectives and Policies
- Moderate Income Housing
- Transportation and Traffic Circulation
- Environmental
- Land Use

The Resource Management Element covers 30 topics from Agriculture to Utility Corridors.

According to the Utah County General Plan, the land use along the southern portion of Camp Williams is planned for agriculture/watershed.

Utah County Zoning Regulations

Zoning regulations for Utah County are outlined in the Land Use Ordinance. There are 17 districts, including residential agriculture, rural

residential, multiple family, neighborhood commercial, industrial, and an airport overlay district. In the County Zoning Map, the area south of Camp Williams is zoned Mining and Grazing 1 (M&G-1).

Utah County Subdivision Regulations

The Land Use Ordinance section, Uses with Special Review Provisions, regulates the division of lands. The regulation provides standards and procedures for acceptance, processing, hearing, and final action on subdivision and other mapping applications.

TransPlan 50

TransPlan50 is the regional transportation plan for urbanized Utah County. The proposed projects and programs include a coordinated system of capital-intensive roadway projects, transit improvements, and active transportation facilities needed over the next 30 years. The plan attempts to minimize impacts on society and the environment while providing enough transportation capacity and choices to ensure that the region's economy continues to grow.

TransPlan50 focuses on building a robust, multimodal, urban transportation system. The primary goals of the plan have evolved to keep pace with the rapidly expanding population and travel demands, with five overarching goals identified:

- Update the Regional Highway System to a Metropolitan Grid-based Network;
- Explore Additional Freeways, Add Capacity;
- Create a Robust Regional Transit System;
- Build a Regionally Connected Active Transportation System; and
- Preserve What We Have.

Utah County Wildfire Protection Plan

The purpose of the Utah County Wildfire Protection Plan (UCWPP) is to provide a collaborative framework for an organized and coordinated approach to the implementation of the National Fire Plan (NFP). This will be accomplished through the maintenance of viable working groups at both state and county levels that meet the intent of the NFP, the Disaster Mitigation Act of 2000, and the Healthy Forests Restoration Act of 2003.

The UCWPP contains prioritized recommendations to:

- Reduce hazardous fuels;
- Promote community involvement;
- Increase communities' abilities to prepare for and respond to wildfires;
- Reduce structural ignitability; and
- Increase wildfire awareness and education.

The plan addresses the wildfire risks where the wildland fuels and human development meet. It addresses the fuels and the threatened property by supporting the 'large land-holding entities in the county: U.S. Forest Service, BLM, and the State of Utah in their fuels mitigation activities and homeowner education programs. The UCWPP emphasizes structure protection through building and fire code adoption and enforcement to reduce ignitability. The document is also designed to aid cities and developed areas as they develop their own community wildfire protection plans and codes. It strongly encourages the development of wildland-urban interface fire codes and CWPPs, as well as offering assistance in these efforts.

Herriman City

Cooperative Agreement with Camp Williams

The National Guard Bureau and Herriman City have entered into a Special Military Cooperative Agreement to establish the terms and conditions applicable to the contribution of federal funds to assist Herriman City's acquisition of long-term interests in, or title to parcels of, land in the vicinity of (or ecologically related to) Camp Williams in accordance with Title 10 USC Chapter 159 Section 2684a (10 USC §2684a) and any subsequent amendments.

Herriman City General Plan

The Herriman General Plan was revised and adopted in July 2022. The general plan is based on common values. By balancing these values with the quest to become more fiscally resilient, Herriman will remain a desirable place to live, recreate, work, and play, offering amenities and services to its residents and visitors.

The General Plan contains five chapters:

- Goals, Objectives and Policies
- Moderate Income Housing
- Transportation and Traffic Circulation
- Environmental
- Land Use

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Herriman City Zoning Regulations

Zoning regulations for Herriman City are outlined in Title 10 of the Municipal Code. Zoning classifications including agriculture, residential, recreation, commercial and office, manufacturing, and mixed use. In the City Zoning Map, the area north of Camp Williams is zoned large-lot forest recreation.

Bluffdale City

Bluffdale City General Plan

The Bluffdale City General Plan was revised and adopted by City Council on June 8, 2022. The plan addresses the residents of Bluffdale desire to protect the pace and feel of the community while expanding amenities for its current residents and future population. Community values include encouraging a variety of local employment, retail, and service opportunities; safeguarding the tax rate; ensuring that public infrastructure adequately serves the population; enhancing recreation opportunities; improving the transportation system to serve the housing expansion; and maintaining large lot neighborhoods.

The General Plan contains six chapters:

- General Plan Toolkit
- Land Use
- Housing
- Economic Development
- Open Space and Trails
- Resiliency

Bluffdale City Zoning Regulations

Zoning regulations for Bluffdale City are outlined in the Land Use Regulations section of the Municipal Code. There are 17 districts, including agriculture, residential, multiple family, neighborhood commercial, industrial, and mixed use. In the City Zoning Map, the area east of, and including a portion of Camp Williams, is zoned Agriculture (A-5).

Lehi City

Lehi City General Plan

The Lehi City General Plan was revised and adopted by City Council on January 25, 2022. The plan addresses the desire to provide the necessary direction for future development. The General Plan outlines the City's goals and policies with relation to physical, social, economic, and environmental issues. It allows the city to proceed into the future in a way that will enhance the amenities and services of the community and the quality of life and available opportunities for Lehi City residents.

The General Plan contains four elements:

- Land Use
- Parks, Open Space and Recreational Facilities
- Moderate Income Housing
- Transportation

Lehi City Zoning Regulations

Zoning regulations for Lehi City are outlined in the Development Code. There are 30 districts, including several classifications for each of the following: agriculture, residential, commercial, and industrial, as well as mixed use, planned community, resort community, transit-oriented development and sports entertainment. In the City Zoning Map, the land



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adjacent to Camp Williams is zoned Planned Community (PC) and Transitional Holdings-5 (TH-5).

Eagle Mountain

Eagle Mountain General Plan

The Eagle Mountain General Plan was revised and adopted by City Council in 2018 and will guide Eagle Mountain forward with a community-based plan that reflects a long-term, strategic view to growth and change. The plan goes beyond the conventional General Plan with separate elements and attempts to more strategically direct future development, while documenting and quantifying processes and outcomes with established metrics. The plan includes individual elements such as housing, transportation, economy, parks and recreation, and land use, but these must share a collective vision for Eagle Mountain's future. The elements do not function independently; they are interconnected and what occurs with one will usually affect another.

Eagle Mountain Zoning Regulations

Zoning regulations for Eagle Mountain are outlined in Titles 16 and 17 of the City Code. Zoning classifications including agriculture, residential, open space, neighborhood commercial, industrial, and mixed use. In the City Zoning Map, the area south of Camp Williams, is zoned agricultural/rural, low-density residential.

City of Sarasota Springs

Saratoga Springs General Plan

The Saratoga Springs General Plan was revised and adopted by City Council on September 6, 2022. Saratoga Springs, as well as the entire

State of Utah, has continued to experience tremendous growth. Additionally, themes related to quality of life, sustainability, and connectivity have remained as important considerations affecting economic resilience and community health, along with a better understanding of their connection with land use. Saratoga Springs anticipates continued growth in the coming decades, underscoring the need for a community-driven framework that will ensure that growth and change will occur in a way that strengthens the economy, enhances quality of life and livability, as well as positively affects future generations of residents.

The General Plan elements include:

- Community Values
- Land Use and Neighborhoods
- Economic Development
- Transportation and Connectivity
- Parks, Recreation, Open Space, and Trails
- Water Resources Preservation
- Natural Hazards

Saratoga Springs Zoning Regulations

Zoning regulations for Saratoga Springs are outlined in Title 19 of the City Code. There are 24 districts, including several classifications for each of the following: agriculture, residential, and commercial, as well as mixed use, industrial, mixed waterfront, business park, and institutional/civic. In the City Zoning Map, the lands adjacent to Camp Williams are zoned for low, medium, and high density residential development.

Town of Cedar Fort

Cedar Fort General Plan

The Cedar Fort General Plan was revised and approved on August 13, 2020. The Plan will allow economic growth without adversely impacting the overall character of the community. It represents an important perspective that will help direct future planning decisions. It will also serve as the rationale for designations and decisions related to the town's land use ordinances and controls. These decisions must carefully consider how each use relates to the community's goals, objectives, and policies, as well as its overall impact on adjoining properties.

The General Plan contains nine elements:

- Community Vision Element
- Land Use Element
- Transportation and Circulation Element
- Public Services and Facilities Element
- Economic Element
- Environmental Element
- Implementation Element

Cedar Fort Zoning Regulations

Zoning regulations for Cedar Fort are divided into 9 districts, including several classifications for residential agriculture, commercial industrial, and mining and grazing. In the City Zoning Map, the lands nearest to Camp Williams are zoned for mining and grazing and large lot residential agriculture.

4.4 Camp Williams Tools

Integrated Wildland Fire Management Plan

In accordance with Army guidance dated September 4, 2002, Army Regulation 200-1 Chapter 4 Section 3.d.12 Wildland Fire Management, Army Regulation 420-1 Chapter 25 Section 1, and to meet its land management goals and objectives, the U.S. Army Garrison Camp Williams (AGCW) has developed this Integrated Wildland Fire Management Plan (IWFMP).

The mission of the AGCW is to provide a professional training environment that includes facilities to support small arms, artillery, demolition, grenade, and crew-served weapons, as well as training scenarios that include, but are not limited to, urban environments, improvised explosive devices, dismounted and mounted maneuver, and forward operating bases. This training requires numerous actions that pose a high risk of wildfire. Wildfires pose a significant threat to the quality and flexibility of military training at AGCW through direct impacts to infrastructure and training realism.

The current environment imposes significant training restrictions that are directly related to negative outcomes from previous wildfires. The primary purpose of the IWFMP is to facilitate existing training opportunities through appropriate mitigation actions designed to balance training requirements while ensuring proper fire management, and to expand upon these opportunities where possible. The IWFMP presents a comprehensive approach to reduce the frequency of wildfires, the potential for larger and more damaging wildfires, wildfire costs, and the potential for impacts to the training mission.

This IWFMP lays out specific guidance, procedures, and protocols for the prevention and suppression of wildfires at AGCW. Its goal is to convey the methods and procedures necessary to minimize fire frequency, severity, and size while providing military units the freedom to conduct



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the training exercises required to maintain a high level of combat readiness.

Utah National Guard Environmental Resource Management Noise Management Plan

The Army National Guard Garrison encompasses approximately 30,000 acres of land in both Salt Lake County and Utah County. This facility serves not only as the primary troop, weaponry, and equipment training site for all Utah units, but also as a major training site for units from around the country. During a typical calendar year, thousands of Guard troops from Utah and elsewhere, as well as Regular Army, Army Reserve, Marine Corps, and Air Force units from across the U.S., conduct routine training exercises at Camp Williams. Other personnel who use Camp Williams include Utah-based law enforcement agencies, the Federal Bureau of Investigation (FBI), other state agencies, and local youth groups.

In order to maintain a capable and reliable military force, the Guard must conduct routine and non-routine activities to ensure that its military personnel, equipment, and vehicles are practiced, maintained, and ready for deployment and use in the field. Owing to the intrinsic nature of some of the operations and activities that are conducted on Guard properties, numerous sources of noise exist, such as firing military weaponry and operating and maintaining military vehicles.

The Guard continually strives to be “a good neighbor” with regard to the local communities its facilities serve. The intent of the Noise Management Plan is to outline general sources of noise at Utah Guard facilities and corresponding Guard noise management protocol as it relates to the sources of noise.

The Noise Management Plan addresses noise management issues related to the following Guard facilities in Utah:

- The Camp Williams Military Reservation located south of Bluffdale

- Statewide Guard facilities, including Facility Maintenance Shops, Local Training Areas, armories, and the Draper Complex (Headquarters)

- The Army Aviation Support Facility located in West Jordan

Even though the Guard’s operations and management strategies are designed to comply with applicable state and federal noise management regulations, there are instances when surrounding communities will hear noise from Guard facilities — even when the noises and source control measures are compliant with applicable noise management regulations and satisfy appropriate personnel hearing-protection requirements.

To address noise generation and source control at its facilities and comply with applicable state and federal noise management regulations, the Guard implements this Noise Management Plan. The plan is part of the Guard’s global noise management program. Noise management has many facets, including noise source identification, source control and minimization (where practical), state and federal regulatory compliance, appropriate hearing-protective measures and equipment, and community relations.

Utah Army National Guard Integrated Cultural Resources Management Plan

DoD Instruction 4715.16 and Army Regulation 200-1 require installations to develop an Integrated Cultural Resources Management Plan (ICRMP) as an internal compliance and management tool that integrates the entire cultural resources program with ongoing mission activities. As a component of the installation master plan, the ICRMP is the Utah Army National Guard commander’s decision document for the conduct of cultural resources management actions and specific compliance procedures. This ICRMP is an internal Guard compliance and management plan that integrates the state’s cultural resources program requirements with mission activities. It also allows ready identification

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of potential conflicts between the Guard's mission and cultural resources and identifies compliance actions necessary to maintain the availability of mission-essential properties and acreage.

The ICRMP is designed in accordance with Army Regulation 200-1 to support the military mission and assist individual facilities in meeting the legal compliance requirements of federal and state historic preservation laws and regulations, in a manner consistent with the principles of cultural resources stewardship. The ICRMP establishes priorities for the identification, and standards for the evaluation, of cultural resources on all Utah Guard facilities.

Cultural resources under the stewardship of the Guard may consist of prehistoric and historic archaeological sites, cultural landscapes, documents, and structures; Native American sacred sites and properties of traditional, religious, and cultural significance; and previously collected prehistoric and historic artifacts. An inventory of cultural resources located at all Guard facilities has been compiled based on the results of known archaeological surveys, historic architectural evaluations, and archival and site record searches. To date, 90 historic buildings and structures, 182 archaeological sites, and no traditional cultural properties have been recorded at Guard sites and training installations.

Utah Army National Guard Integrated Natural Resources Management Plan

The INRMP is the primary guidance document and tool for managing natural resources at Utah Army National Guard's Camp W.G. Williams. Camp Williams encompasses approximately 24,000 acres of federally and state-owned land in Salt Lake and Utah Counties that is licensed by the U.S. Army to the Guard. The installation must provide a variety of environmental conditions and habitats in which to train soldiers. The management of the camp must be conducted in a way that provides for sustainable, healthy ecosystems, complies with applicable

environmental laws and regulations, and provides for no net loss in the ability of installation lands to support the military mission. Installation commanders can use INRMPs to manage natural resources more effectively, ensuring that installation lands remain available and in good condition to support the installation's military mission over the long term. The INRMP integrates all aspects of natural resources management with the rest of AGCW's mission and is therefore the primary tool for managing AGCW's ecosystems and habitats while ensuring the successful accomplishment of the military mission at the highest possible levels of efficiency.

The following goals and objectives provide the framework for the natural resources management programs:

- Program Management: Manage natural resources in a manner that is compatible with and supports the military mission while complying with applicable federal and state laws and Army regulations and policies.
- Vegetation: Manage vegetation to support the military mission, optimize protection of existing habitats, maintain native species, and enhance wildlife habitat.
- Fish and Wildlife: Maintain fish and wildlife populations while minimizing potential impacts to the military mission.
- Threatened and Endangered Species and Habitats: Manage sensitive species using an ecosystem approach, while maintaining the military mission at Camp Williams.
- Soil Conservation: Manage soil to minimize sediment loss and erosion.
- Water Resources: Maintain water resources, including wetlands, so that they remain resilient, functional, and with no net loss of acreage.



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- **Agricultural Outleasing:** Manage agricultural outleases at Camp Williams to support the military mission, facilitate multiple uses of the installation, and enhance natural resources management.
- **Fire Management:** Manage wildland fires and fuels at AGCW in a manner that minimizes safety risks, improves training ability, and enhances natural resources.
- **Integrated Pest Management:** Minimize impacts of invasive, noxious, and pest species—both plant and animal — on the military mission and natural ecosystems, using an Integrated Pest Management approach.
- **Integrated Training Area Management:** Manage training areas in a manner that optimizes mission and landscape while supporting and, to the extent feasible, enhancing natural resources at Camp Williams.

The natural resources management philosophy has changed to include a greater emphasis on ecosystem-based management. Ecosystem-based management better preserves a diversity of habitats that better facilitate both resource conservation and sustainable training opportunities. This philosophy also better manages the installation in the context of emerging adverse environmental factors, such as greater wildfire frequency and intensity and greater climate variability. These threats may convert habitats and significantly alter environmental conditions at Camp Williams in a manner that inhibits both the military mission and natural resources conservation.

Camp Williams Military Installation Resiliency Risk Study

The Camp Williams Military Installation Resiliency Risk Study (MIRRS) was developed as a separate component of this study and provided to the Utah Army National Guard to inform future resiliency planning for

Camp Williams. The study identifies the primary risks to this critical military training facility due to climate change in the form of:

- Extreme Heat;
- High-Intensity Storms;
- Land Degradation;
- Drought;
- Wildland Fires; and
- Increased Energy Demand.

Local communities around Camp Williams are equally at risk from these same threats. The MIRRS promotes several strategies for Camp Williams to collaborate with these communities to address these mutually shared climate change risks.

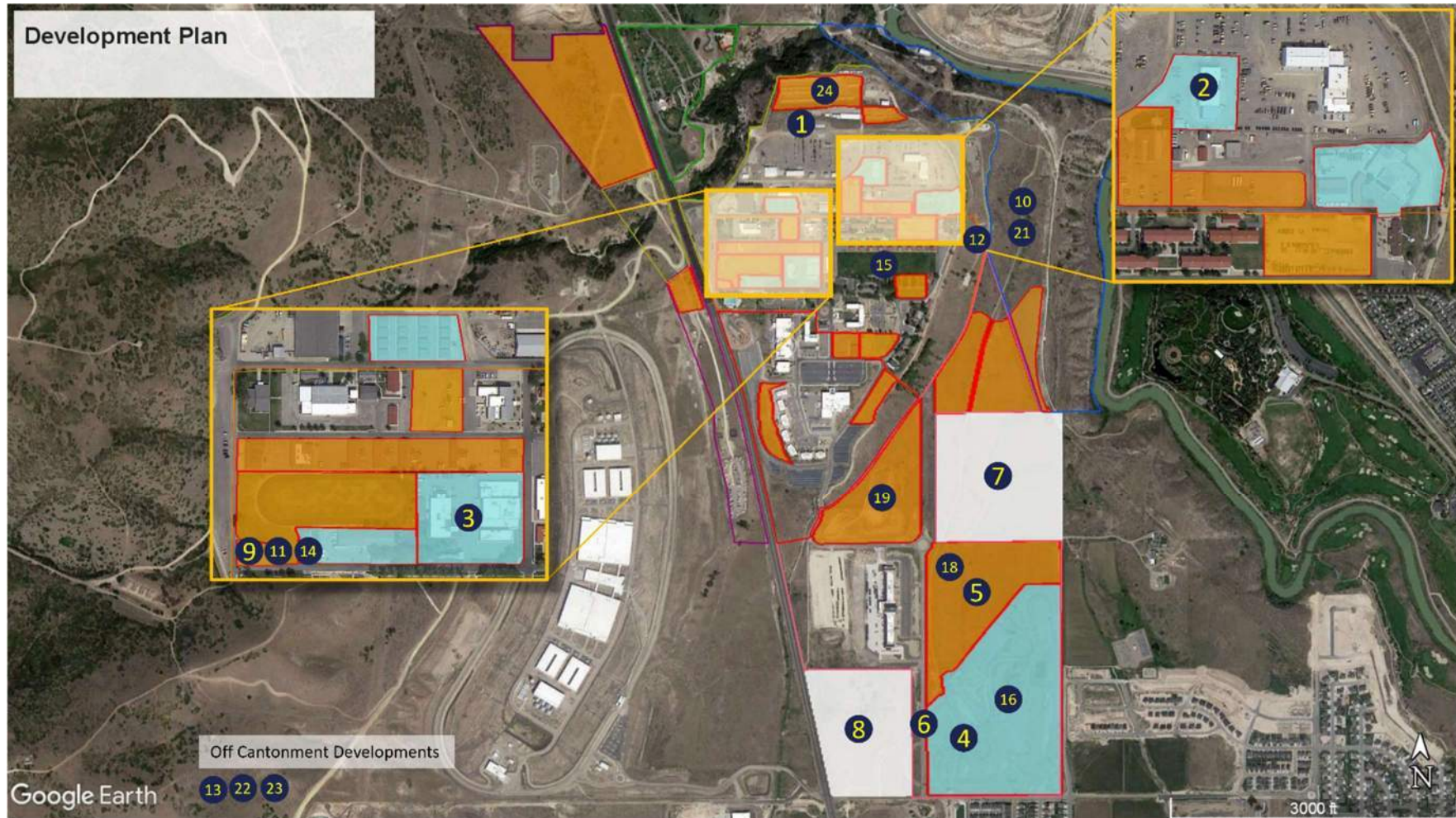
Camp Williams Master Plan

The Camp Williams Master Plan, currently under development, provides a road map for the future development of the installation's garrison area east of Redwood Drive (State Highway 68). Significant facility and mission growth is mapped and envisioned to occur over the next 7 to 15 years. This includes a plan to construct a new entry control facility along 2700 North at Holbrook Farms. Facility construction and capital investment will occur principally in the lower garrison area near Lehi and Saratoga Springs and may require public utility infrastructure upgrades for power, wastewater, and stormwater utilities.

Additionally, the plan identifies several capital projects conceived by the Utah Army National Guard to enhance the resiliency of this vital training installation. Military master plans are generally classified as Controlled Unclassified Information and not publicly available due to DoD information security regulations.

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Figure 4.1 Camp Williams Master Plan



Source: Basemap Google Earth / Overlay Matrix Design Group



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5

Compatibility Findings Assessment

In relation to military readiness, compatibility can be defined as the balance or compromise between the needs and interests of both the community and military. The goal of compatibility planning is to promote a collaborative environment in which both community and military entities communicate and coordinate to identify and implement mutually supportive actions that allow both parties to achieve their objectives. This collaborative approach provides the context in which policies and actions can be developed and recommended through a WTM CAS Implementation Plan.

5.1 Compatibility Factor Overview

A number of variables are used to determine whether military and community plans, programs, and activities are compatible or in conflict. For the West Traverse Mountain CAS, 25 compatibility factors, or general types of compatibility problems (Figure 5.1), were used to identify, assess, and establish the specific set of compatibility issues that are occurring in the Study Area.

A compatibility issue is defined as something that impacts, hinders, or presents an obstacle to either the military mission(s) or to nearby communities and requires an action to be resolved or effectively mitigated. This chapter provides an assessment of each compatibility issue that was identified through the West Traverse Mountain CAS. The issues are evaluated in terms of the existing or potential impacts they have, or may have, on the military and/or surrounding communities and the severity of those impacts.

Each compatibility issue is identified under one of the 25 compatibility factors used as the basis for the compatibility analysis. The compatibility factors and findings are discussed in alphabetical order in Section 5.3 of this chapter. Each finding is numbered with an alphanumeric compatibility factor code. The codes are numbered in the order the findings are presented within the specific compatibility factor. For example, “LU-1” stands for Land Use and refers to the first finding within the Land Use development factor.

Figure 5.1 25 Compatible Factors



Compatibility Factor Evaluation Methods

This section outlines the methodology used to assess each factor for compatibility issues of specific concern for the West Traverse Mountain and surrounding communities.

The identification of compatibility issues consisted of a comprehensive and inclusive discovery process to identify significant stakeholder issues relative to the 25 compatibility factors. At beginning of the project, the CAS Team conducted interviews with key project stakeholders to discuss the CAS process and document compatibility issues that existed or could exist in the future. The following stakeholder groups participated:

- Salt Lake County
- Utah County
- Bluffdale
- Cedar Fort
- Eagle Mountain
- Herriman
- Lehi
- Saratoga Springs

Additional compatibility issues were identified through meetings with the CAS Policy Committee and Technical Working Group, public workshops, and the project consultant's technical evaluation and experience. Additional stakeholder input was gathered through the project website and at stakeholder events held throughout the project.

The development of strategies that address the identified compatibility issues (see West Traverse Mountain CAS, Chapter 6: Implementation Plan) was both directly and indirectly affected by the evaluation process. Issue assessment included determining the severity of each issue's impact(s) on both the missions at Camp Williams and the quality

of life of nearby residents. The severity of impacts was also used to help prioritize implementation.

When reviewing the assessment information in this chapter, it is important to note the following:

- This chapter provides technical background on the compatibility issues that were identified as relevant to the West Traverse Mountain CAS. The intent is to provide appropriate information for stakeholders to be sufficiently aware of, and knowledgeable about, the issues and the potential mitigation strategies to assess the viability of specific CAS recommendations. The discussion is not designed or intended to be utilized as an exhaustive technical evaluation of existing or future conditions within the CAS Study Area.
- Of the 25 compatibility factors considered, 10 were determined to be inapplicable to this CAS based on the lack of issues identified by stakeholders and the public as well as CAS Team experience. The 10 factors are listed below.
 - Anti-Terrorism/Force Protection
 - Cultural Resources
 - Dust/Smoke/Steam
 - Energy Development
 - Frequency Spectrum Capacity
 - Housing Availability
 - Public Services
 - Scarce Natural Resources
 - Vertical Obstructions
 - Vibration



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Although there were no compatibility issues identified relating to these 10 factors, they are defined and briefly summarized in this section in order to define all the factors that were considered and represent the actual analysis conducted.

Anti-Terrorism/Force Protection (AT/FP)

Anti-Terrorism/Force Protection (AT/FP) relates to the safety and security of personnel, facilities, and information on a military installation. The DoD AT/FP standards require that all installation components, such as access gates, adhere to design/planning criteria and minimum construction standards that mitigate vulnerabilities and threats to an installation and its occupants. Important aspects of these criteria and standards include access control and clearance zones around installation perimeters to maintain sight lines and manage access to the installation. Due to current domestic and global conditions, military installations have implemented more restrictive standards to address AT/FP concerns. These measures may vary based on installation mission/daily activities and include increased security checks and/or the creation of physical barriers at entry points (e.g., gates, spike barriers, tire shredders).

Cultural Resources (CR)

Cultural resources are objects, places, and practices that are especially representative of, and/or meaningful to, a specific group of people, their worldview, belief system, or way of life. Cultural resources include prehistoric and historic-period artifacts, archaeological sites, buildings, structures, districts, and landscapes, as well as historic-period records and photographs.

Dust/Smoke/Steam (D/S/S)

Particles of dust and other materials found in the air are referred to as particulate matter. At certain concentrations, this particulate matter can be harmful to humans and animals if inhaled and strain is placed on the heart and lungs that provide oxygen to the body. PM10 and PM2.5, with particles less than 10 μm in diameter and less than 2.5 μm , respectively, and considered toxic can be caused by many phenomena, including vehicular traffic on unpaved roads and surfaces, wind blowing unpaved and unvegetated areas, vehicle maneuvers, explosions, aircraft operations, and other earth-moving activities such as construction, demolition, and grading. Smoke can be created by fire (controlled burns, agricultural burning, and artillery exercises), industrial activities, and other similar processes. Similarly, steam can be created by industrial and other activities and is more prominent during cooler weather. Dust, smoke, and steam are compatibility issues if sufficient in quantity to impact flight operations, such as reducing visibility or damaging equipment.

Energy Development (ED)

The development of energy sources, including alternative energy sources such as solar, wind, or geothermal could pose compatibility issues related to glare (solar photovoltaic panels), vertical obstructions (wind turbines and geothermal steam plumes), and radar operations (wind energy disturbance). It is in the military's and communities' interests to support alternative energy development for both energy security and economic reasons. The emphasis of the ED factor is to identify gaps in coordination and/or communication regarding energy development and increase understanding of communities' pursuits, opportunities sought by alternative energy developers, and the intersection of these endeavors with military missions to improve communication and coordination efforts that ensure mutually compatible development. By identifying potential sources of conflict if uncoordinated or pursued in isolation from either the community,

private development, or the military unilaterally, this process serves to highlight the existence of potential conflict and address technological approaches or processes and communication and coordination approaches to prevent any entity from encroaching upon the other.

Frequency Spectrum Capacity (FSC)

Frequency spectrum refers to the range of electromagnetic waves capable of carrying signals for point-to-point wireless communications. In a defined area, the frequency spectrum is limited, and increasing demand for frequency bandwidth from commercial applications such as cellular phones, computer networks, GPS units, and mobile radios is in direct competition with the military's need for capacity sufficient to maintain existing and future missions and communications on installations.

Housing Availability (HA)

Local housing availability addresses the supply and demand for housing in the region, the competition for housing that may result from changes in the number of military personnel stationed at an installation, and the supply of military family housing provided by the DoD.

Public Services (PS)

Public services concerns include assurances that services such as police, fire, emergency medical services, parks and recreation, and infrastructure are of good quality and available to the installation and surrounding communities as the area develops. The supply and demand of these public services in the event of emergency situations are also considered.

Scarce Natural Resources (SNR)

Pressure to gain access to valuable natural resources (such as oil, natural gas, minerals, and water resources) that are located on military installations, within military training areas, or on public lands historically used for military operations can impact land utilization and military missions. Natural resources are assets for installations and ensuring that the resources and associated environment are properly conserved, managed, and used sustainably is critical to the current and future military mission.

Vertical Obstructions (VO)

Vertical obstructions are buildings, trees, structures, and other features that encroach into airspace used for military operations. Vertical obstructions can present safety hazards for both the public and military personnel. Vertical obstructions are addressed by FAA Part 77 authority near civilian airports and military airfields.

Vibration (V)

Vibration is an oscillation or motion that alternates in opposite directions and may occur because of an impact, explosion, noise, mechanical operation, or other change in the environment. Vibrations may be caused by military and/or civilian activities and can disrupt civilian activities and impact the quality of life.

5.2 Best Practices for Achieving Compatibility

This section describes recent, current, and ongoing practices that the CAS stakeholders are practicing or implementing to achieve compatibility and to manage ongoing regional concerns. These include the 2012 Camp Williams Joint Land Use Study, DoD Readiness and Environmental Protection Integration Program, Army Compatible Use Buffer (ACUB) program, and the Sentinel Landscapes Partnership program.

2012 Joint Land Use Study

The Camp Williams JLUS was a joint effort between the cities of Bluffdale, Eagle Mountain, Herriman, Lehi and Saratoga Springs, the counties of Salt Lake and Utah, and Camp Williams. This was undertaken in an effort to guide planning and development in local governments in the vicinity of Camp Williams as well as protect local residents, property and business owners from adverse impacts due to training activities performed at Camp Williams. Joint planning efforts on the part of the local governments and Camp Williams established recommended strategies that will equally protect all interested parties. The JLUS resulted in a set of strategy recommendations in the areas of policy, planning and zoning, coordination and communication, and outreach for local government and the Utah National Guard.

The 2012 JLUS identified several concerns related to development encroaching on Camp Williams. These concerns included incompatible current zoning and future land use plans in jurisdictions that are located close to the camp boundary; proposed large scale developments, including sensitive land use, near Camp Williams; and the availability of large undeveloped land parcels near the installation that could easily result in incompatible land uses. These concerns and

others were all related to encroachment of potentially incompatible land uses around Camp Williams and communities in the Study Area.

Several recommendations from the 2012 JLUS included strategies to address incompatible development through the development of land use easements and land acquisitions. Using these tools, the Utah ARNG successfully established buffer areas around critical areas of Camp Williams where encroachment presented particularly high risks to the military missions. The strategies included specific recommendations to leverage the REPI and ACUB programs for implementation of critical buffer areas.

REPI, ACUB, and Sentinel Landscapes Programs

The military manages or uses land and airspace for testing, training, and operational missions. These resources must be available and of sufficient size, cohesiveness, and quality to accommodate effective military operations. Military and civilian activities can compete for limited land area and/or airspace, especially when the use areas encroach on one another. Competition for these shared resources can impact current activities and future growth opportunities for all users.

REPI

The REPI Program provides DoD funding and allows the military the ability to partner with eligible entities such as local governments or non-governmental organizations to secure conservation easements on property in the vicinity of, or ecologically related to, a military installation or military airspace with willing landowners. The REPI Program enhances military readiness by helping to eliminate, minimize or mitigate encroachment on military mission footprints that extend beyond an installation's boundary. These mission footprints can include the following:

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- Accident potential zones
- Explosive safety quantity distance areas
- Noise zones
- Surface safety zones
- Vertical obstructions

ACUB

The ACUB program allows installations to work with partners to encumber off-post land to protect habitat and buffer training without acquiring any new land for Army ownership. Through ACUB, the Army reaches out to partner organizations to identify mutual objectives of land conservation and to prevent development of critical open areas. The Army contributes funds to the partner's purchase of easements or properties from willing landowners. These partnerships preserve high-value habitat and limit incompatible development in the vicinity of military installations. Establishing buffer areas around Army installations limits the effects of encroachment and maximizes land inside the installation that can be used to support the installation's mission.

Sentinel Landscapes

The U.S. Department of Agriculture, DoD, and the Department of the Interior established the Sentinel Landscapes Partnership in 2013. The Sentinel Landscapes Partnership is designed to achieve the following:

- Strengthen military readiness
- Conserve natural resources
- Bolster agricultural and forestry economies
- Increase public access to outdoor recreation opportunities

- Increase climate change resilience

In this unique collaboration, the federal agencies work with state, local, and private partners to preserve and restore natural lands important to the nation's defense mission. By promoting land use around military installations that is compatible with the national defense mission, the program helps ensure installations remain viable by sustaining the testing, training and operational missions at those facilities. Private landowners are assisted with the implementation of sustainable management practices on their lands that have economic and environmental benefits.

Implementation

Camp Williams and the UTARNG have successfully initiated a land conservation program and executed a series of land transactions to establish land buffer areas around the installation boundary leveraging a combination of ACUB, REPI and Sentinel Landscape programs. While efforts are still underway, the results to date have helped reduce encroachment on Camp Williams while maintaining military readiness, minimizing impacts to stakeholders, and enhancing community quality of life.

In 2015 and 2016, the UTARNG and Camp Williams initiated participation in the ACUB and REPI programs to acquire land and establish easements on lands to begin to limit encroachment on the installation and reduce the potential for incompatible development. In 2017 the West Traverse Community Partnership was established, and in 2018 the West Traverse Sentinel Landscape Act was approved.

The West Traverse Sentinel Landscape Fund's (WTSLF's) purpose is to identify and establish a "buffer" of land around the Camp Williams training area with the vision of being mutually beneficial to Camp Williams and surrounding communities. The WTSLF helps mitigate some of the effects of military training: noise, dust, safety hazards, and fire. The communities benefit by the preservation of open land of



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compatible use, such as parks, trails, wildlife habitat, erosion control, agriculture, and wildfire mitigation.

The WTSLF Committee has identified 11,314 acres for participation in the program. State funds provide a 25% match. If approved, 2021 GS funds will be used in the amount of \$1.5 million for 330 acres on the south boundary and \$2 million for 330 acres on the north boundary. The 2019 Legislature appropriated \$1 million one-time from the General Fund and the 2020 Legislature appropriated \$1.2 million one-time from the General Fund. Money from the General Fund is appropriated to the WTSLF, and then from the WTSLF to the program from which it is passed-through.

As of fiscal year 2020, the combination of the REPI, ACUB and Sentinel Landscape Programs and Partnerships have achieved the following results.

- 2,180 acres of land critical to the viability of the Camp Williams mission have been preserved
- A total of 17 land acquisition and conservation easements transactions have been executed
- A total of \$43.7 million have been expended

In May of 2021, the USDA announced it would be investing \$330 million in 85 projects across the country to include the West Traverse Sentinel Landscapes Partnership. A portion of the funds, approximately \$7 million will be used to support additional land conservation easements around Camp Williams.

Figure 5.2 provides a map of the area around Camp Williams that is part of the land conservation efforts. The map shows areas where land/easement transactions have been completed as well as priority areas for future efforts. In addition, the map shows the extent of the West Traverse Sentinel Landscape area. The key stakeholders involved in the partnership include 12 entities:

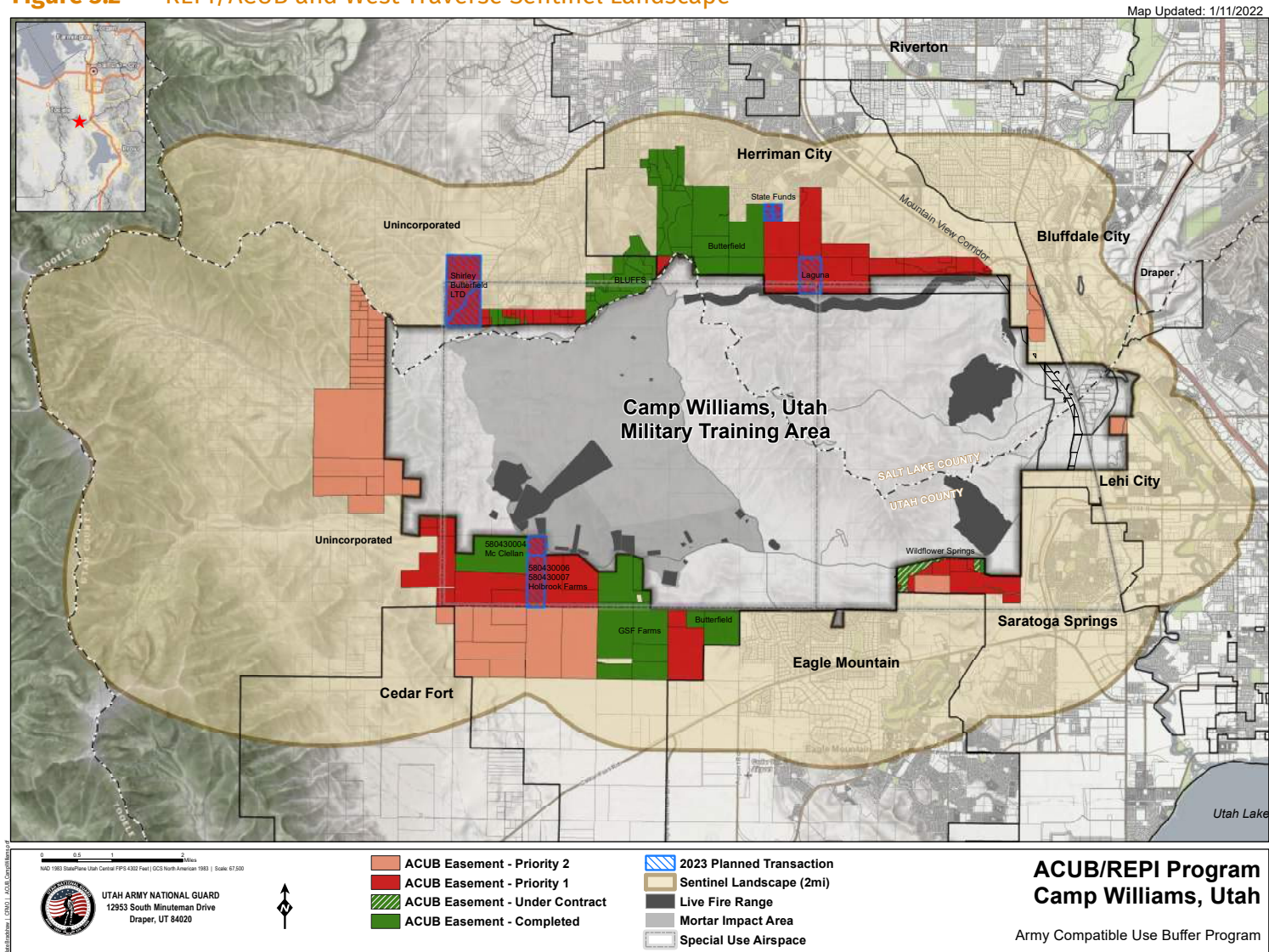
- Herriman City

- City of Saratoga Springs
- Eagle Mountain City
- Salt Lake County
- State of Utah
- USDA
- West Traverse Sentinel Landscape
- The Conservation Fund
- Rocky Mountain Power
- Vivint Solar
- UTARNG
- Camp Williams

There have been numerous benefits because of the program implementation. Key benefits to date include the following:

- Enhanced recreational trails, species habitat and wildlife corridors
- Protection of agricultural lands
- Improved local community safety
- Protection of military range operations
- Enhanced military operational safety
- Support for multiple military service missions

Figure 5.2 REPI/ACUB and West Traverse Sentinel Landscape



Source: READINESS AND ENVIRONMENTAL PROTECTION INTEGRATION [REPI] PROGRAM

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5.3 Compatibility Findings

Air Quality (AQ)

Air quality is defined by criteria air pollutants and hazardous air pollutants that are regulated at the federal and state level. For compatibility, the primary concerns are pollutants that limit visibility (such as particulates, ozone, etc.) and potential non-attainment of air quality standards that may limit future changes in operations at the installation or in the area.

As described in Chapter 4, the EPA sets national air quality standards for six criteria and hazardous air pollutants which states are obligated to enforce. The Utah Division of Air Quality, within the Utah Department of Environmental Quality, is the state regulatory authority that provides oversight, direction, and guidance for air quality management in the State of Utah.

The division has a Planning Branch where state air pollution plans, such as the State Implementation Plan (SIP) are developed and the Permitting Branch where various types of air pollution permits are prepared and issued. In addition, the division has a Compliance Branch which is responsible for ensuring all regulated sources of air pollution are operating within the parameters of an issued air permit or other applicable regulations. There are two primary assistance programs operated within the division.

- Clean Air Retrofit, Replacement, and Off-Road Technology (CARROT) Grant Program provides incentives to local government, businesses, and the public to reduce air emissions from vehicles and other equipment.
- Small Business Assistance Program helps small business comply with federal and state air quality regulations and permitting requirements.

Key Terms

Approval Order. A permit issued by the regulatory authority allowing the operation of equipment/process that emits regulated air pollutants.

Attainment Area. An attainment area is a geographic area that meets the NAAQS for a criteria pollutant.

Criteria Pollutants. The criteria pollutants are the six principal pollutants harmful to public health and the environment for which the Environmental Protection Agency has set NAAQS. The pollutants are carbon monoxide (CO), lead, nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM), and sulfur dioxide (SO₂).

Emissions Averaging Period. Emissions monitoring generally involves a specific averaging period. The averaging time refers to the period of time which data are averaged. Common averaging times for air quality standards include 1-hour, 8-hour, 24-hour, and annual averages.

Exceedance. An exceedance occurs when a measured air pollution level exceeds criteria prescribed by the Environmental Protection Agency.

Maintenance Area. A geographic area that previously did not meet the NAAQS standard but is currently in compliance and operating under a maintenance plan to demonstrate continued compliance for a specific timeframe.

National Ambient Air Quality Standards. The NAAQS are standards for outdoor air pollutants established by the Environmental Protection Agency under authority of the Clean Air Act.

Nonattainment Area. A nonattainment area is a geographic area where air pollution levels persistently exceed NAAQS, or that contributes to ambient air quality in a nearby area that fails to meet standards. Designating an area as nonattainment is a formal rulemaking process made by the Environmental Protection Agency, typically only after air quality standards have been exceeded for several consecutive years.

Ozone (O₃). Ozone is a pungent, colorless, toxic gas with direct health effects on humans, including respiratory and eye irritation and possible changes in lung functions. Ozone is created when hydrocarbons and nitrogen oxides released from vehicles and industrial sources react in the presence of sunlight. Because ozone requires sunlight to form, it occurs in concentrations considered serious, primarily between the months of April and October.

Particulate Matter (PM). Particulate matter consists of fine metal, smoke, soot, and dust particles suspended in the air. This air pollutant can have both cardiovascular and respiratory health impacts on humans. Particulate matter is measured by two sizes: course particles (PM₁₀), or particles between 2.5 and 10 micrometers in diameter in size, and fine particles (PM_{2.5}), or particles less than 2.5 micrometers in diameter.

Pre-construction Permit. A permit/approval order that allows the installation of a regulated emission source.

Stationary Source. Source of air pollution that is fixed in a location or not mobile under its own power such as boilers, power plants, paint spray booths and generators.

AQ-1

There is a concern about the degrading air quality in the region resulting from continued development and urban sprawl.

The West Traverse Mountain Study Area is in one of the fastest growing regions in the country. Associated with this growth is economic development that brings various sources of air pollution, both mobile and stationary, that are having an impact on the air quality in the larger region and the Study Area. Air pollution in the area has the potential to affect quality of life for communities and the military mission at Camp Williams.

Compatibility Assessment

The West Traverse Mountain Study Area is somewhat unique in that relatively undeveloped land lies to the west and continues to the State of California. However, to the north, east, and south the region is surrounded by one of the fastest-growing areas in the United States. Camp Williams and the nearby communities of the Cities of Bluffdale, Saratoga Springs, Eagle Mountain, Herriman, and Lehi are situated between the metro areas of Salt Lake City and the City of Provo.

Development in the Study Area tends to spread out because of available land. The economic growth that accompanies this fast-paced development also brings sources of air pollution. Mobile sources such as cars, trucks, aircraft and other vehicles are responsible for a significant portion of air pollution in Salt Lake County and Utah County, due to the transportation needs of the region. In addition, industrial and commercial activities are sources of air pollution from stationary facilities/equipment such as factories, power plants, boilers, generators, and paint spray booths.

The Utah Division of Air Quality operates multiple air monitoring stations throughout the state to determine the levels of air pollution. The monitoring stations collect data primarily on criteria pollutants to help determine what regions are compliant/non-compliant with the NAAQS. Most of the monitoring stations are in the greater Salt Lake City and City of Provo metro areas. One monitoring station is located in Herriman City in the Study Area.

The West Traverse Mountain Study Area and Camp Williams are located within, or partially within, several NAAQS non-attainment or maintenance areas listed below.

- Northern Wasatch Front Ozone Nonattainment Area
- Southern Wasatch Front Ozone Nonattainment Area
- Salt Lake County PM 2.5 Nonattainment Area
- Utah County PM 2.5 Nonattainment Area



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- Salt Lake County PM 10 Maintenance Area
- Utah County PM 10 Maintenance Area
- Sulphur Dioxide Nonattainment Area

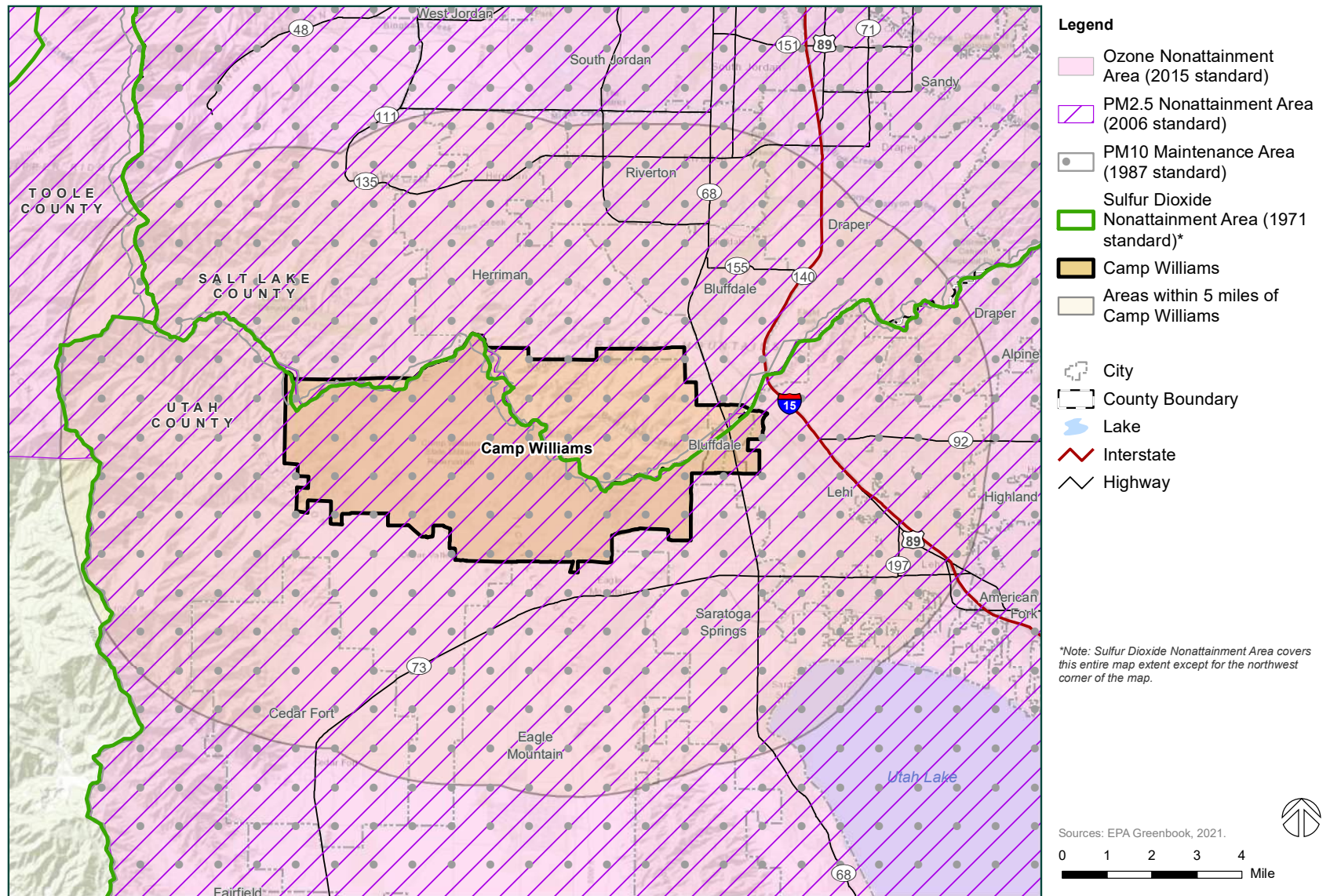
The ozone and particulate matter nonattainment designations are of particular concern as it relates to potential impacts in the Study Area. Figure 5.3 is a map showing the air quality nonattainment and maintenance areas in the Study Area.

Currently, the ozone nonattainment areas are designated marginal nonattainment (least stringent category), however according to the Utah Division of Air Quality it is likely the Northern Wasatch Front Ozone Nonattainment Area will be “bumped” up to moderate nonattainment in 2022 which would likely increase the regulatory requirements in the area.

For the stakeholder communities located in the NAAQS non-attainment and maintenance areas, there are potential quality-of-life issues related to public health due to ongoing air pollution. Exceeding the EPA-regulated levels of criteria air pollutants over extended periods of time has been shown to have health impacts on the public, particularly the young and old.

Besides quality-of-life concerns, these health impacts can have economic impacts on communities when illnesses related to air pollution result in necessary medical actions that may affect people’s ability to be productive members of the community. In many cases, the financial costs associated with the medical impacts are borne by local/state/federal agencies and ultimately the public as taxpayers.

Compatibility Findings Assessments





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Camp Williams and its military mission and training operations can also be impacted because of the air quality nonattainment/maintenance designations in the Study Area. The military must comply with the same air quality regulations that other agencies, businesses, and organizations are subject to. Of specific concern to installation operations are particulate matter emissions that result from various training activities. The installation takes actions, such as roadway dust suppression, to minimize non-point particulate matter emissions.

If Camp Williams adds new emission sources or modifies existing emission sources, the installation may be subject to the New Source Review process where the pre-construction permit application is reviewed for compliance criteria. If approved, an approval order is issued with applicable conditions regarding any required emission control devices, operation/maintenance requirements and recordkeeping associated with the facility/equipment. The process can be lengthy depending on the situation and in nonattainment areas especially, there may be additional permit limitations/requirements. In some cases, air permits may be denied if it is determined the emissions would contribute to ongoing nonattainment with the NAAQS. Changes to the current mission and/or plans for new missions where there may be air quality impacts may be delayed or, in extreme situations, may not be allowed to be implemented. In some cases, new air regulations may be promulgated that impact previously approved operations. There is a potential for these factors to contribute to decisions resulting in locating new military missions or realigning existing missions to areas in attainment for the NAAQS.

Camp Williams is also subject to Utah Air Quality Rule 240: Prescribed Burns and Rule 204: Emission Standards: Smoke Management. These regulations establish rules related to prescribed burns other than those associated with agriculture. Prescribed burns of vegetation emit particulate matter and volatile organic compounds such as methane which acts as a precursor for ozone and is also a greenhouse gas. In some cases, prescribed burns can be limited if determined they would contribute to a violation of the NAAQS. Camp Williams regularly

conducts prescribed burns as part of its wildland fire management program. The installation notifies the air regulatory agency in advance of planned burns to ensure there are no conflicts.

Areas of the country that are nonattainment for the NAAQS are also subject to the EPA General Conformity Rule. This rule applies to all federal actions undertaken in designated nonattainment/maintenance areas, except for specific exemptions. Because the West Traverse Mountain Study Area is within nonattainment/maintenance areas, the rule applies to the region. To comply with the law, it must be demonstrated that applicable air pollution emissions resulting from a federal action conform to the applicable SIP, in this case the State of Utah SIP, such that the project implementation would not cause additional violations of the NAAQS. In some cases, this can be problematic and can affect decisions about where and how large federal actions, such as establishing new military missions or realigning existing missions, take place. The Transportation Conformity requirement is a similar EPA rule that applies specifically to federal highway and transit projects in nonattainment/maintenance areas. Camp Williams can be affected by new roadways in the region in either a positive or negative way depending on the potential impacts to the military mission.

Biological Resources (BIO)

Biological resources include federal, and state listed species (threatened and endangered species) and their habitats. These resources may also include areas such as wetlands and migratory corridors that are critical to the overall health and productivity of an ecosystem. The presence of sensitive biological resources may require special development considerations and should be included early in the planning process.

The State of Utah does not have a state endangered species law but is subject to the federal Endangered Species Act (ESA). The State of Utah complies with all aspects of the ESA including the protection of all federally threatened and endangers species. The Utah Department of Wildlife Resources (UDWR) is required by Utah Administrative Code R657-48 to maintain the Utah List of Sensitive Species (see Key Terms section). In addition, U.S. Army regulation 200-1 requires installations to manage lands for threatened/endangered species, including proposed, candidate, and species at risk.

Camp Williams and the UTARNG prepared an Integrated Natural Resource Management Plan (INRMP) in 2020 that addresses wildlife species on the installation.

Key Terms

Critical habitat. Critical habitat is a specific area essential to the conservation of a threatened or endangered species and which may require special considerations or protection. Under this designation, the USFWS must review all federal government activities within a designated critical habitat area to ensure that threatened and endangered species are protected.

Bald and Golden Eagle Protection Act (BGEPA). Federal law that protects bald eagles and golden eagles.

Endangered species. Endangered species are designated plant or animal species that have a very small population and are at greater risk of becoming extinct. The presence of threatened or endangered species may require special development considerations, could halt development, and could impact the performance of military missions.

Endangered Species Act (ESA). The ESA provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The lead federal agencies for implementing ESA are the USFWS and U.S. National Oceanic and Atmospheric Administration (NOAA) Fisheries Service. Species protected under the ESA include birds, insects, fish, reptiles, mammals, crustaceans, flowers, grasses, and trees.

Species of Greatest Conservation Need (SGCN). Species that show declines in population or habitat or have threats to current/future species sustainability and require conservation efforts to recover.

Threatened species. According to the ESA, a threatened species is “any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”

Utah Sensitive Species. Wildlife species that are federally listed, candidates for federal listing, have a conservation agreement in place, and other species that have credible scientific data to indicate there is a threat to future viability. At the state level, Utah maintains a list of sensitive species, also referred to as “species of concern.”



Compatibility Assessment

The existence of federally threatened or endangered species on any military installation could impact the ability of the military to fully perform its mission activities depending on the location and range of the species. The ESA requires federal agencies to ensure any actions will not jeopardize the existence of any listed species or impact any designated critical habitats of listed species. As noted in the Camp Williams INRMP, there are currently no critical habitat or federally listed wildlife species known to reside on the installation. However, there are three threatened/endangered species that could potentially occur on Camp Williams:

- June Sucker (endangered)
- Yellow-billed Cuckoo (threatened)
- Ute Ladies'-tresses (threatened)

There are also two species, the monarch butterfly currently listed as a federal candidate species, and the little brown that is currently under consideration for federal listing. Both species have been observed on the installation in the past. There are also multiple federally listed threatened and endangered wildlife and plant species in the State of Utah, some of which can potentially be found in the CAS Study Area.

In addition to federally listed species identified in the CAS Study Area, there are state identified sensitive species/species of concern known to reside on and around Camp Williams. Table 5.1 provides a summary of key species identified on Camp Williams.

During interviews with Camp Williams personnel, it was noted that two additional species, the Pinyon Jay and the Green River Pebblesnail, may become a concern for the installation.

The Pinyon Jay is typically found in the pinyon-juniper forests, scrub oak, and sagebrush habitat across the State of Utah, including the CAS Study Area. The bird is present on Camp Williams where habitat is available.

BIO-1

There is a concern about the future status of “sensitive species” at Camp Williams and potential impacts to training activities at the installation.

The listing of federally threatened or endangered species on Camp Williams has the potential to affect military training operations. In some cases, species initially identified as species of concern/sensitive species may eventually be listed at the federal level.



Pinyon Jay, USFWS, 2021.

Compatibility Findings Assessments

Table 5.1 Wildlife Species on Camp Williams

Species	Federal Status	State Status
Bald Eagle	Protected under BGEPA	SoC/SGCN
Golden Eagle	Protected under BGEPA	SGCN
Short-eared Owl	N/A	SoC
Burrowing Owl	N/A	SoC/SGCN
Ferruginous Hawk	N/A	SoC/SGCN
American White Pelican	N/A	SoC/SGCN
Grasshopper Sparrow	N/A	SoC
Little Brown Bat	Under Assessment	SGCN
Monarch Butterfly	Candidate Species	N/A

Source: Camp Williams INRMP, 2020.

The Green River Pebblesnail has also been identified as a species in decline. Historically the snail has been found in Utah and Salt Lake counties, the Jordan River, Provo River, and several tributaries and may be found on Camp Williams. The primary threat to the species is the degradation of water quality and changes in water flow in waterways where the snail lives. The snail is included in a Conservation Agreement in Utah and Nevada.



Green River Pebblesnail, iNaturalist.ca, 2021.

The State of Utah is evaluating the identification of both the Pinyon Jay and the Green River Pebblesnail as sensitive species to help prevent the listing as federally endangered or threatened. There is a concern that the federal listing could result in limiting the use of the waterways where the snail is found. There could also be impacts to the military training mission at Camp Williams if the species were listed at the federal level.

The Camp Williams INRMP identifies the importance of managing the lands at the installation to ensure the following:

- Sustainable and healthy ecosystems
- Compliance with applicable laws and regulations
- Provides “no net loss” of installation lands to support the military mission



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Actions at the state and federal levels related to the management of wildlife species have the potential to affect Camp Williams. The loss of land areas, on which the military can train at Camp Williams, could result in impacts to the operations. It is important for the UTARNG and Camp Williams to take necessary steps to help address potential wildlife species management actions that could result in a reduction of available training lands at the installation. The management of wildlife species without requiring the federal listing of the species or designation of critical habitat is generally a preferred alternative.

The existing minimal development, well-preserved environment, and habitat at Camp Williams is what makes the area suitable for the UTARNG mission. Through active partnerships and environmental stewardship in the past, the military has demonstrated the ability to manage installation lands in a manner that is beneficial to both the needs of training soldiers and sustainable land management.

Communication/Coordination (COM)

Communication/Coordination refers to programs, plans, and partnerships that promote interagency communication and coordination, as well as dissemination of information to the public and other stakeholders. Interagency communication serves the general welfare by promoting a comprehensive planning process inclusive of all stakeholders. Interagency coordination also supports the development and inclusion of mutually beneficial policies for local communities and the military in local planning documents, such as comprehensive plans. Providing relevant and timely information to the public keeps the public informed of activities and instills confidence and support.

COM-1	Opportunity for enhanced coordination between Camp Williams and adjacent jurisdictions/stakeholders to address mutual issues.
No formal coordination exists to proactively address land use, transportation, and other infrastructure compatibility issues between the surrounding jurisdictions and Camp Williams.	

Compatibility Assessment

The cities, county, and military installations in the Study Area use informal means of communication to coordinate and share information about activities based on individual staff knowledge, experience, and professional networks. Consequently, there are no established memoranda of agreement or written protocols that outline communication practices. Establishing formal communication practices could allow stakeholders to collaborate regarding military activities and needs, regardless of position or personal relationship, and would ensure greater consistency in communication and collaboration.

The lack of established communication protocols can have numerous negative impacts, including overlooked or neglected development application reviews, potentially resulting in incompatible land

development or an ill-informed public review process. Surrounding communities and government staff may not fully understand the issues that are particularly relevant to Camp Williams. Additionally, there can be inconsistencies across the various jurisdictions as to when Camp Williams should be consulted regarding the potential for compatibility issues. Likewise, local governments and the public should be notified when events or other unusual installation activities occur and when these activities may impact residents in terms of noise and vibration, traffic congestion, or public health. Public notification can be facilitated through the establishment and implementation of formalized communication protocols.

COM-2	Transportation planning and regional road infrastructure coordination is limited between Camp Williams and the Utah Department of Transportation (UDOT).
There is no formalized communication between UDOT, the Metropolitan Planning Organization, Camp Williams, and the Utah Army National Guard. Camp Williams is situated within a highly constrained, north-south transportation corridor, and the Mountain View Corridor extension bisecting Camp Williams is under construction. This project seeks to relieve traffic from I-15 but will also promote other road improvement/construction projects around the cantonment area.	

Compatibility Assessment

Concerns regarding formal coordination between Camp Williams, jurisdictions, and agencies is especially acute with regard to regional transportation planning, which is overseen by the Mountainland Association of Governments (MAG) and Wasatch Front Regional Council (WFRC). When developing long-term regional transportation plans, MAG and WFRC assimilate the local transportation planning priorities of the local jurisdictions including Camp Williams, as necessary, and solicit input from a Regional Planning Committee and a Technical Advisory



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Committee. These committees include decision-makers from the local jurisdiction, representatives from UDOT and the Utah Air Quality Board.

In the past, as noted in the 2012 JLUS, Camp Williams' representation has been limited in regional and local transportation planning efforts. Because of Camp Williams' location in a key north/south transportation corridor, the UTARNG is a stakeholder in the transportation planning proximate to the installation. As southern Salt Lake County and northern Utah County continue to grow at a rapid rate, the formal involvement of the military in regional and local transportation planning becomes more critical.

Without the formal participation of the UTARNG and Camp Williams in the regional and local transportation planning process, transportation plans may be developed that result in incompatible land uses that impact training activities on the installation.

Frequency Spectrum Interference/Impedance (FSI)

Frequency spectrum refers to the entire range of electromagnetic frequencies used for communications and other transmissions, which includes communication channels for radio, cellular phones, and television. In the performance of typical operations, the military relies on a range of frequencies for communications and support systems. Similarly, public and private users rely on a range of frequencies in the use of cellular telephones and other wireless devices on a daily basis.

Key Terms

Frequency impedance. Impedance is the interruption of electronic signals due to the existence of a structure or object between the source of the signal and its destination (receptor). Certain structures have the potential to block, or impede, the transmission of signals from antennas, satellite dishes, or other transmission/reception devices affected by line-of-sight requirements.

Frequency interference. Interference is the inability to effectively distribute or receive a particular frequency because of competition for the same or similar frequencies. As the use of the frequency spectrum increases, such as with the rapid advances in cellular phone technology and cellular phone usage over the last decade, and as development expands near military installations and operational areas, the potential for frequency spectrum interference increases.

Frequency spectrum. The frequency spectrum is the entire range of electromagnetic frequencies used for communications and other transmissions, which includes communication channels used for radio, cellular phones, and television.

Radio altimeter. Radio altimeters are a type of avionic equipment used by pilots to accurately determine aircraft altitude, especially during low-

altitude operations. Radio altimeter technology is sometimes referred to as radar altimeter.

Vertical Obstructions. Vertical obstructions are objects or structures that exceed a specified height above ground level and extend into airspace. Vertical obstructions may be created by buildings, trees, structures, or other features that are of greater height than, and encroach into, the navigable airspace used for military operations (aircraft approach-departure surfaces, transitional surfaces, military training or flight routes). These can present a safety hazard to both the public and military personnel and potentially impact military readiness.

Technical Background

The DoD's use of frequency spectrum supports safe operations and the effective delivery of weapons. The DoD's frequency spectrum needs for testing, evaluation, and training is constantly increasing, while the spectrum available for DoD use is decreasing. The National Telecommunications Industry Association Office of Spectrum Management explains that:

...almost every agency of the Federal Government uses the spectrum in performing mandated missions. The DoD uses the spectrum extensively for tactical uses and non-tactical uses. In the United States tactical uses are generally limited to a number of specific testing sites and training facilities, but DoD's non-tactical applications are extensive and include aircraft command and control, mobile communication in and around military bases, and airfields and long-distance communications using satellites.

Frequency interference is related to other transmission sources. Interference can result from several factors listed below:

- Using a new transmission frequency that is near an existing frequency



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- Reducing the distance between two antennas transmitting on a similar frequency
- Increasing the power of a similar transmission signal
- Using poorly adjusted transmission devices that transmit outside their assigned frequency or produce an electromagnetic signal that interferes with a signal transmission
- Existing electronic sources and uses created by portable systems affecting entire communities utilizing Wi-Fi broadband systems
- Industrial sources that produce electronic noise by-product

The military relies on a range of frequencies for communications and support systems. Since 1993, Congress has been selling federal spectrum bands for reallocation to the private sector, promoting the development of new telecommunications technologies, products, and services. The expanding public and commercial use of the frequency spectrum from wireless transmitters to consumer electronics can encroach on the military's use of the frequency spectrum. Increasing community and DoD demands for this important resource can create conflicts for all users.

FSI-1 New telecommunication tower development is not coordinated with Camp Williams.

Cellular network and other communication tower development around Camp Williams may cause interference with military frequencies and potentially pose a vertical obstruction hazard to low-flying military aircraft.

Compatibility Assessment

New cell phone towers and other telecommunications tower siting and development are not formally coordinated with Camp Williams as part of the planning process or prior to the construction of these towers. Camp Williams has expressed concerns for flight safety in relationship to new cell phone towers being installed in the vicinity of the

installation. There are two specific concerns that engineering personnel raised during stakeholder interviews:

- Potential for interference with military frequencies including helicopter navigation
- Potential for vertical obstruction impacts to flight safety

Radio altimeter interference from 5G communications, specifically C-band interference, is a documented aviation safety risk. Interference from 5G communications involving towers in the vicinity of airports can negatively affect radio altimeters. The potential interference is primarily related to the relative closeness of the frequency spectrum used by 5G cell service (3.7-3.98GHz) and aircraft radio altimeters (4.2-4.4 GHz). This presents a particular risk to aircraft control systems that are reliant on radio altimeters. The helicopters currently operated by the UTARNG at Camp Williams depend on radio altimeters to conduct their flight missions safely. Modern aircraft radio altimeters transmit a continuous radio wave from the aircraft to the ground using frequency-modulated continuous-wave (FMCW) radar. The distance to the ground, or altitude of the aircraft, is determined by the size of the shift in the signal's frequency from the returning signal. Radio altimeters are essential during autopilot landings. They are also effective during low visibility conditions when the pilot's ability to see the ground is limited and during other low altitude operations.

In addition, the cell phone towers can pose a hazard to the flight safety of helicopters operating in the region around Camp Williams. The UTARNG operates various helicopter types at Camp Williams and in the surrounding airspace, and depending on the mission, these rotary aircraft fly at different altitudes. Military helicopters traveling to and from Camp Williams from the Salt Lake Airport in West Jordan typically fly between 750 and 1,000 feet above ground level (AGL). Helicopters entering or exiting Camp Williams may fly as low as 200 feet over areas that are adjacent to the installation that fall within identified flight corridor ingress and egress points.

As economic growth and development has occurred in the region around Camp Williams, the demand for additional cell phone service has increased. To meet the additional demand and provide wider cell phone service coverage, additional towers have been constructed. Cell phone towers are often up to 200 feet in height, however depending on the specific location and technical specifications towers can be as tall as 400 feet.

Several communities in the Study Area have regulations regarding telecommunication tower heights including Saratoga Springs, Herriman City, Bluffdale, Lehi City, and Eagle Mountain City. None of the tower height regulations address requirements in terms of vertical obstructions and flight safety hazards for Camp Williams helicopter operations. The lack of coordination between jurisdictions and cell tower developers with Camp Williams poses potential impacts to the military mission and the safety of UTARNG personnel.



Soldiers boarding a UH-60 helicopter at Camp Williams, UTARNG, 2021.



Infrastructure Extensions (IE)

Infrastructure refers to the public services and supporting facilities, including drinking water and wastewater lines and treatment plants, electric grid components, and roadways, which support existing communities. Infrastructure extensions refer to the same public services and supporting facilities that makes proposed development feasible. Public services and facilities should be appropriate for the type of urban or rural development they serve but also limited to the existing and planned needs and requirements of the area. The provision of a safe transportation system, including facilities that support all modes of transportation (automobile, mass transit, railway, highway, bicycle, pedestrian, air, etc.) is an important infrastructure component. An adequate transportation system contributes to local, regional, and state connectivity; supports economic development and growth more generally; and is key to a vibrant community and high quality of life.

Infrastructure plays a vital role in land use compatibility. Infrastructure can enhance the operations of an installation and nearby communities by providing needed services while eliminating competition for resources. Conversely, infrastructure can create encroachment issues if facilities are expanded without considering the consequences of future development. The extension or expansion of community infrastructure to areas adjacent to an installation can induce growth that may result in incompatible uses and conflicts between a military mission and community activities and needs. Within general planning efforts and through appropriate consideration and guidance, infrastructure extensions can serve as a mechanism to guide development toward appropriate areas, protect sensitive land uses, and improve compatibility between community land uses and military missions.

IE-1

Future infrastructure extensions may support incompatible development.

If future infrastructure construction in local jurisdictions does not take compatibility planning into consideration, the Camp Williams mission may be at risk from new encroachment and incompatible development.

Compatibility Assessment

The placement of new utilities service into undeveloped areas almost guarantees the development of those areas at some point in the future. One of the more expensive components of new development is the construction of new utilities, and developers look for inexpensive land with access to utility infrastructure to minimize costs associated with construction.

The Salt Lake County draft West General Plan discusses utilities availability relative to new growth in the area. The southern portion of the plan area includes northern Camp Williams and unincorporated areas of the county. To the east of the unincorporated county areas, and north of Camp Williams, are the communities of Herriman City and Bluffdale. The draft West General Plan proposes varied land use north of Camp Williams:

- Mountain multi-use
- Residential
- Master planned community
- Agriculture
- Recreation conservation

Compatibility Findings Assessments

There are unincorporated areas identified as limited development until 2040 and beyond, once mine closures are complete in the region. The plan states that Rocky Mountain Power, the primary electric provider in the region, has installed several main transmission lines to supply power to portions of the undeveloped areas in western Salt Lake County. The power utility has plans to “bring power to newly developed areas in conjunction with developers’ needs” and has committed to meeting the electric needs as the population expands into undeveloped areas of the county.

Dominion Energy, the natural gas provider in the region, has installed main gas transmission lines in western Salt Lake County as part of its long-range plan to provide gas to undeveloped areas in the county. The intent, as noted in the plan, is to install gas distribution lines to meet future development needs.

Other utilities, including water, wastewater, and telecommunications are identified in the West General Plan as being readily available in communities immediately east of the unincorporated areas of the county.

The Utah County General Plan identifies unincorporated areas south of Camp Williams as agriculture/watershed land use. Adjacent to the unincorporated areas there are jurisdictions south of Camp Williams including Cedar Fort, Eagle Mountain, and Lehi City. The general plan is generally unspecific on utility services and infrastructure extensions in this portion of the county.

To ensure land development in the unincorporated areas of the counties maintains compatibility with the Camp Williams mission, planning coordination is important. Collaboration between the military, county planners, and utility providers is a key aspect to preventing future utility extensions in the Study Area from causing future development that encroaches on Camp Williams, placing the military mission at risk. Potential impacts to the military mission and community development include:

- Additional noise complaints from new residential developments;
- Constraints on range use to minimize off installation impacts;
- Additional competition for frequency spectrum;
- Constraints to helicopter flight corridors entering and departing the installation; and
- Additional risks from wildland fires for new communities in the wildland urban interface areas.

IE-2 Concern with potential growth impacts associated the Mountain View Corridor extension through eastern Camp Williams.

The Mountain View Corridor extension alignment will run through the eastern portion of Camp Williams, providing an additional transportation connection between the Ogden region and Salt Lake City region. Future plans call for several connecting east-west arterial connectors between the Mountain View Corridor and Interstate 15. The new roadway and connections will increase the potential for new transportation and utility infrastructure extensions in areas that may directly impact the Camp Williams mission and facilities infrastructure.

Compatibility Assessment

The State of Utah is in the process of completing the construction of a new highway called the Mountain View Corridor or SR-85. This four- to six-lane highway will run parallel to SR-68, bisecting Camp Williams to the west, and creating a preferred connection between I-15 in Lehi City and I-80 in Salt Lake City. Two portions of the new highway are already completed:

- Road section from SR-73 to 2100 North
- Road section from 16000 South to SR-201

The two-mile highway section from SR-73 to 2100 North is located south of Camp Williams. The 21-mile section from 16000 South to SR-201 is



West Traverse Mountain Compatibility Area Study

north of Camp Williams. The roadway section from 2100 North to 16000 South will connect the two completed portions of the project and runs through Camp Williams creating an additional bisection of the installation (SR-68 already bisects Camp Williams to the east). This connector section is planned to start construction in early 2024 and be completed in late 2025.

Future plans also call for several connecting corridors between the Mountain View Corridor and Interstate 15 to the east. The new roadway and connections will increase the potential for new developments in areas that are already growing rapidly. As jurisdictions develop plans for utility infrastructure extensions to support new development, there is the potential for incompatible land uses and increased traffic density that may impact the Camp Williams mission. Areas that may see new development are listed below:

- 14400 South Intersection — There is the potential to develop additional residential areas in Herriman along the Mountainview Corridor near Rosecrest Road.
- 16000 South Intersection — This intersection will connect the Mountainview Corridor to Redwood Road and is near I-15. Bluffdale intends for this area to be the focus of economic development.
- Interchange 2100 North to I-15 and SR73 — The portion of the Mountainview Corridor that runs through Lehi will connect to I-15 to the east and SR-73 to the south. This area is where future economic development will be centered.
- Intersection of SR-85 and Mountainview Corridor to 2100 North Frontage Road in Lehi and Saratoga Springs
- Intersection of SR-73 and Pioneer Crossing in Saratoga Springs and Eagle Mountain
- Intersections on Pony Express Parkway from Redwood Road to Smith Ranch Road

- Intersections from SR-73 to Lake Mountain Expressway in Eagle Mountain to Cedar Fort

The new Mountain View Corridor highway may create additional compatibility impacts to the Camp Williams mission, from the potential development along the highway. In addition, the likely development along roadways that connect SR-85 and I-15 may also create situations where incompatibilities arise. Multiple impacts to Camp Williams may arise from incompatible development:

- Increased traffic congestion around the installation
- Noise complaints from sensitive land uses such as residential, schools, places of worship and medical facilities
- Constraints to helicopter flight corridors entering and departing the installation
- Constraints on military land and air operations where Mountainview Corridor crosses the installation

Figure 5.4 shows the Mountain View Corridor in the area around Camp Williams.

IE-3 Competition for Roadway Rights of Way

Traffic congestion in the communities around Camp Williams continues to increase as economic growth drives new development. With limited undeveloped land to construct new roadways, there is a risk military lands may become an alternative location for new public roads. This would likely lead to mission impacts for Camp Williams.

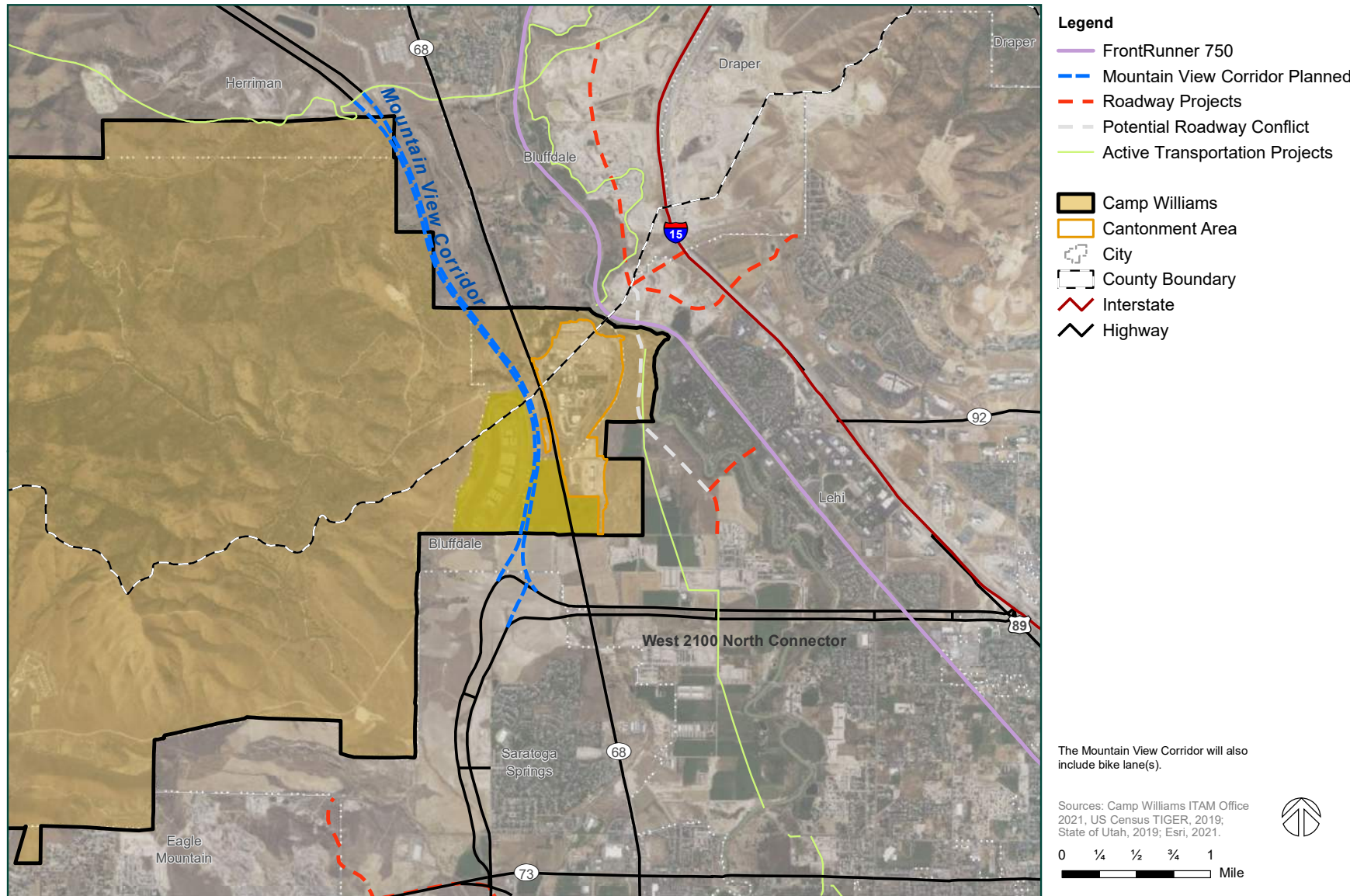
Compatibility Assessment

Along with the extension of the regional transportation infrastructure, corresponding growth and development pressure in the communities surrounding Camp Williams is, in turn, creating increased traffic and roadway congestion. Increased traffic congestion has created a need for alternate east-west arterials to alleviate increased commuter traffic on local roadways. Local communities are pursuing viable transportation alternatives to manage these increased traffic loads. Some transportation concepts have promoted the idea of an east-west connector to cut across the lower garrison of Camp Williams east of Highway 68, as one of several projected east-west arterial connectors between the Mountain View Corridor and Interstate 15. The lower garrison of Camp Williams currently is the only viable area for future installation development. The Camp's long-range development plan calls for a complete build-out of its lower garrison necessary to meet federal military and state emergency preparedness facility requirements.

Additionally, current commercial and medium-density residential development along 2700 North just east of Highway 68 will increase traffic on this east-west arterial connector. Camp Williams is exploring a relocation of its main entry control point on Highway 68 to 2700 North, directly north of the Holbrook Farms master-planned community under development.

In addition to increased land competition necessary to support local expansion of transportation infrastructure, new roadway and connections may also increase the potential for utility infrastructure extensions in areas that may directly impact the Camp Williams mission and facilities infrastructure.

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Land/Airspace Competition (LAS)

The military manages and uses land and air space for testing, training, and operational missions. These resources must be available and of sufficient size, cohesiveness, and quality to accommodate effective training and testing. Military and civilian land and air operations can compete for limited land and air space, especially when the usage areas are near each other. The use of these shared resources can impact future development and operations for all users.

Key Terms

Unmanned aerial systems (UASs). UASs are aircraft that are capable of operating without an internal pilot, are tethered by a radio control link, and can be preprogrammed for both flight and payload operations.

LAS-1 The Utah School and Institutional Trust Lands Administration (SITLA) owns land within the Camp Williams fence line.

Approximately 960 acres of land owned by SITLA are located within the boundary of Camp Williams. The three land parcels that make up the acreage are situated in the middle of the training ranges on the installation but are not accessible to personnel training on the range.

Compatibility Assessment

The Utah SITLA owns three land parcels that are located within the boundary of Camp Williams, surrounded by the training range. The first land parcel is approximately 313 acres in size and is in the western portion of the range on the duded impact area. Per U.S. Army Regulation 385-63 Range Safety, this area of a range is defined as “permanently delineated boundaries normally used to contain non-sensitive, high-explosive military munitions.” The additional co-located two parcels, approximately 534 acres and 113 acres, are centrally located on the range in the vicinity of the Latimer, Goshute, and South Beef

Hollow range training areas. These locations on the range are used for various training activities associated with the installation mission. There is also a small 40-acre parcel adjacent to the installation's southwest corner. During the first public open house meeting, a concern was raised regarding the practicality of these SITLA-owned land parcels being located on the Camp Williams training range. In addition, it was noted that the SITLA land parcels may not be fully available for military training on the range, potentially limiting the usefulness of the range areas.



SITLA land parcels (blue boxes) located on Camp Williams Range (pink area), Utah Geospatial Resource Center, 2022.

Utah trust lands are administered by SITLA, which was created in 1994 by the state legislature. Across the state, approximately 3.4 million acres are managed by the administration, generating revenue, primarily from energy and mineral lease royalties and real estate land sales. Land leases can also be used to support the following:

- Forest stewardship
- Livestock grazing



West Traverse Mountain Compatibility Area Study

- Easements
- Special use leases, such as for agricultural, commercial, and telecommunication

Land sale auctions are held for parcels when in the best interest of trust beneficiaries and when no environmental concerns have been identified. From a fiscal standpoint, this is generally based upon the financial benefits from a one-time sale versus any potential lease revenues over a period of years.

The proceeds generated by lease and land sales are placed in public endowments supporting specific institutions, as mandated by Congress, including state public education. These trust lands are separate and distinct from public lands in the state.

The 2012 Camp Williams JLUS noted that the SITLA-identified beneficial use for the three parcels on Camp Williams is sand and gravel extraction. Any lease or sale of the parcels would be complicated by difficulties accessing the properties as they are located in the middle of the training range. The location greatly reduces the utility and value of any potential leases. The JLUS indicates that discussions were in the initial stages to investigate the potential for land transfers between SITLA, BLM, and DoD that would result in the three parcels being owned by the UTARNG.

The potential exists for incompatible land uses related to the three land parcels owned by SITLA that are located on the Camp Williams range. The use of the lands for any future leases or similar undertakings would likely not be compatible with the military's use of the training ranges where the land parcels are situated.

LAS-2 Increased use of civilian unmanned aerial systems in the future could impact military operations and generate security concerns.

It is likely that both military and civilian use of UASs will increase in the future. The use of civilian UASs can cause safety and security concerns for the military if they are operated close to Camp Williams, particularly where aviation activities occur.

Compatibility Assessment

The use of drones, or UASs, has increased across the U.S. in recent years due to their availability in terms of cost, use, and size. As of April 2022, there are over 850,000 UASs registered with the FAA in the U.S. Approximately 70% of the registered UASs are recreational, and 30% are commercial. Both recreational and commercial drones create security concerns for military personnel and equipment, as many drones have built-in cameras. Any unauthorized drone operation near Camp Williams is a potential threat to the installation operations. Drone operations near military installations can create security risks for the military if the drone is carrying malicious material or used to capture photographs of federal property, operations, activities, or facilities. In addition to these security concerns, there is risk associated with improper use of drones near locations where military aircraft including helicopters operate, potentially increasing the danger of mid-air collisions and posing a hazard to aircraft safety. Whether these actions are intentional or unintentional, UAS activity is a concern to Camp Williams.

The FAA regulates UASs in active airspace and requires that UASs meet certain size and weight requirements to be registered for authorized use. Additionally, the FAA creates no-fly zones, or restricted flight areas, for UASs, such as around airports or over military installations, and monitors and tracks UASs flying in unauthorized areas. The FAA receives more than 100 reports of unauthorized drone flights per month nationwide. The FAA has developed a UAS software tool, B4UFLY, to assist operators with identifying locations where drones are restricted

Compatibility Findings Assessments

or otherwise require special permission to fly. The Special Use Airspace (SUA) over Camp Williams is identified in the B4UFLY app as requiring a review of active FAA advisories prior to UAS operation. The point of contact for information is the FAA Terminal Radar Approach Control (TRACON) in Salt Lake City.

Between January 2020 and June 2022, there were no reported sightings of unauthorized UAS operation in the Study Area. There have been multiple reports of sightings in the Provo and Salt Lake City areas. No reported sightings does not necessarily mean there are no unauthorized UAS operations in the Study Area; it means that none have been reported to the FAA. As shown in Table 5.2, there are approximately 1,463 drones registered in the communities around Camp Williams (as of the second quarter, 2022). These include both commercial and recreational drones. Only cities are reported in FAA registration; therefore, the total number of UASs in unincorporated Utah and Salt Lake Counties are not included in this list.



"No Drone Zone" poster that informs users the area is prohibited from drone use (FAA, n.d.)

The SUA over Camp Williams is a Restricted Area (RA) (R-6412 A/B/C/D) as identified in FAA Order J 7400.10B, Special Use Airspace, dated February 16, 2020. The altitude of the RA is 0 to 9,000 MSL for sections A/C and 9,000 to 10,000 MSL for B/D. Camp Williams Range Control activates the restrictions based on the types of weapons systems being fired on the range facilities. The RA extends slightly beyond the Camp Williams boundary in certain locations. The operation of UASs in Special Use Airspace including RAs is not authorized without permission, or in some cases, review of active FAA advisories.

Utah Code, Title 72, Chapter 14 regulates the operation of UASs in the state. This regulation preempts the ability of local ordinances related to UAS operations to be enacted, except as allowed by section 72-14-103.

Table 5.2 Drone Registrations in the Project Study Area, Second Quarter, 2022.

Jurisdiction	Drones registered by recreational flyers	Drones registered by certified remote pilots
Bluffdale	116	58
Cedar Fort	2	0
Eagle Mountain City	262	137
Herriman City	305	138
Lehi City	517	263
Saratoga Springs	261	123

Source: Federal Aviation Administration, *Geographic listing of hobby/non-hobbyist small UAS registry enrollments and registrants*, 2022.



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Utah Code, Title 72, Chapter 14 regulates the operation of UASs in the state. This regulation preempts the ability of local ordinances related to UAS operations to be enacted, except as allowed by section 72-14-103.

LAS-3 The need for additional land in the Study Area to develop new roadways could result in mission impacts at Camp Williams.

Traffic congestion in the communities around Camp Williams continues to increase as economic growth drives new development. With limited undeveloped land to construct new roadways, there is a risk military lands may become an alternative location for new public roads. This would likely lead to mission impacts for Camp Williams.

Compatibility Assessment

Regional transportation planning in the area around camp Williams is conducted by two separate organizations:

- Wasatch Front Regional Council (WFRC); and
- Mountainland Association of Governments (MAG).

The WFRC, as the designated Metropolitan Planning Organization (MPO), provides transportation planning for the areas north of Camp Williams. This includes Salt Lake County, Herriman and Bluffdale. The WFRC's roles and responsibilities include multiple modes of transportation such as:

- Vehicle roadways;
- Mass transit;
- Rails; and
- Bicycle and pedestrian.

The organization has developed the 2019-2050 Regional Transportation Plan (RTP) that lays out the strategy for the regional scale transportation investments. A complementary Transportation Improvement Plan

provides the six-year capital investment approach to bring the RTP goals and objectives to fruition. One of the goals identified in the RTP is to enable manageable and reliable traffic conditions which focuses on the time residents spend in their vehicles getting from place to place. There is a recognition that traffic congestion is on the rise as a result of the economic growth and associated development the region has seen. A Congestion Management Program has been implemented to identify areas of traffic congestion and strategies to mitigate the problems. One of the many identified strategies is capacity additions to the transportation network.

The WFRC has also prepared the Oquirrh Connection Feasibility Study which looks at developing an improved alternative route between southern Salt Lake County, Utah County, and the Tooele Valley. The Study Area includes Camp Williams and locations to the immediate north and south of the installation. There are three potential corridors identified in the study:

- North route Barney's Canyon
- Center route Middle/Butterfield Canyon
- South route Oak Canyon/Ophir

The south route would run west, immediately south of Camp Williams along the existing SR-73 corridor, transitioning to 8000 North, then north on 17600 West and eventually northwest along Oak Canyon Road. This route is in relatively close proximity to the Camp Williams southwestern boundary.

The MAG is a transportation planning organization for the region south of Camp Williams including Utah County, Lehi, Saratoga Springs, and Eagle Mountain. The MAG Trans Plan 50 lays out the regional goals and guidelines for transportation planning across the area. The plan also identifies manageable and reliable traffic conditions as one of the desired benefits. One of the plan's goals is to update the existing regional highway system to a metropolitan grid-based network. Due to

the tremendous economic growth and development, many urban locations in the area do not have adequate roadway connections.

Some of the major traffic choke points identified in the MAG plan are listed below:

- The Point of the Mountain choke point which is the narrow land area in Lehi between Utah County and Salt Lake County
- The Lehi east/west choke point that constrains east and west transportation corridors in the city
- The Cedar Pass choke point where Lehi connects to the Cedar Valley to the west

All three of these heavily congested traffic corridors affect Lehi transportation and impact both residents and travelers moving through the area. The MAG proposes to use a regional highway grid spacing to ease congestion by dispersing traffic more evenly across the area. The specifics of how to implement an improved transportation network in Lehi and Utah County are still in preliminary planning stages, and the desired end state is well into the future. It is currently unknown if any of the future plans would impact Camp Williams as a result of new roadways, realigned roadways, or other proposed projects.

Local jurisdictions in the Study Area also have transportation planning included as part of the development of their respective general plans. In some cases, traffic studies are prepared to identify the need for improving traffic flow and reducing congestion on local roadways. These efforts typically look at how transportation systems can enable the overall community planning to achieve the desired land use end states while enhancing the quality of life within the jurisdiction.

Both the WFRC and the MAG highlight the importance of all stakeholders being involved in planning and implementing transportation projects in the region. The WFRC and MAG coordinate with each other as they develop transportation strategies that would affect their areas of responsibility. Local jurisdictions are represented in the transportation

planning organizations to ensure local needs/concerns are presented and addressed as part of the regional planning.

Because Camp Williams is in the middle of the region covered by the two transportation planning organizations and surrounded by local jurisdictions, it is important for the installation to be involved and participate in the planning processes. Without this involvement, potential impacts to the Camp Williams operations will not be identified early in the transportation planning process. While open and undeveloped land on, or near, Camp Williams may be looked at as a potential resource to solve regional transportation issues, the outcomes of such actions would likely degrade the military training mission at the installation.

Land Use (LU)

Local jurisdictions' general plans and zoning ordinances can be the most effective tools for preventing or resolving land use compatibility issues. These tools ensure the separation of land uses that differ significantly in character or that may adversely impact one another, regardless of use similarity. For instance, industrial uses are often separated from residential uses to avoid impacts from noise, odors, and lighting.

Land use planning near military installations is used to evaluate and ensure land use compatibility. For example, local jurisdictions evaluate noise when considering the compatibility of residential developments with nearby commercial or industrial areas to determine allowable uses. As the land between two municipalities is developed, or the land between a municipality and a military installation is developed, both entities are affected. New residents, tenants, or building owners are typically not fully aware of the implications of locating near an active military installation or training area.



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LU-1 Incompatible land uses within modelled noise threshold areas.

Military noise zones identified in the 2012 JLUS have existing incompatible land uses and future identified incompatible land uses. This creates a potential hazard for the health, safety, and welfare of the general public.

LU-2 Incompatible future land use designations.

The jurisdiction's future land use designations around Camp Williams may be incompatible with Camp Williams' missions and therefore may not protect the public health, safety, and welfare.

Compatibility Assessment

Camp Williams activities are vital to continuing the military mission in Utah, and the land used for the activities must be protected. Landowners with property near Camp Williams, and residents and business owners on property surrounding Camp Williams, must also be protected from adverse impacts that could occur due to Camp Williams training activities.

Several cities adjacent to Camp Williams anticipate future residential development or have existing zoning in place to allow residential development. Residential development may be considered incompatible with the training operations at the Camp; however, if the zoning is already in place, it will be difficult to prevent development from happening. In this case, public notification will be important in order to mitigate future resident concerns. Existing residentially zoned lands should be developed with the lowest density possible. Low density, large lot developments should be encouraged along the camp boundaries. For lands that are currently zoned for agriculture uses or very low density residential, development should focus on protecting those areas to provide a natural buffer between denser development and the camp.

General plan updates and zoning code updates can play an important role to mitigate future conflicts between the camp and local development. Establishment of protective zones or overlay districts can act to limit development within areas close to a military installation. These buffer areas will serve to protect the military training activities as well as protect people and property outside the camp.

Compatibility Assessment

As part of a general plan that cities adopt, future land uses are designated. Future land use is similar to zoning designations but are typically more general in nature. Existing development patterns, future population estimates, and future job forecasts help a city determine future land uses when general plans are updated.

As communities develop and expand in response to growth and market demands, there is potential for incompatible development to be located closer to military installations and associated operational areas. New development that is not properly assessed for compatibility can generate new land use conflicts and other compatibility issues. This process is referred to as encroachment. Encroachment can have negative impacts on community safety and economic development as well as on the sustainability of military activities and readiness; therefore, addressing encroachment issues is currently one of the military's greatest operational challenges nationwide.

Military installations, local communities, agencies, and other stakeholders should collaborate to protect the long-term viability of existing and future military missions.

When assessing updates to future land use designations and zoning, a city should take into account existing conditions and how any changes will impact neighboring communities. In the case of Camp Williams, surrounding communities should consider military training operations and how increases in density, both residential and commercial, may affect operations.

Many of the existing and future land use designations around Camp Williams allow agriculture and low-density residential development. Despite seeing rapid population growth over the last 10 years, several cities within the Study Area currently allow lower intensity uses and those development trends do not appear to be changing. Large lot, low density residential and agriculture uses should be preserved as much as possible in order to maintain a safe buffer from military training operations. An example of conserving development buffers are the Yellow Fork and Rose Canyon recreation areas in Salt Lake County. These areas include a trail system for hiking, running, and mountain biking. Creating more recreational areas like these helps promote recreation for surrounding residents as well as lessening opportunities for more intense developments.

Incompatible future land use designation around Camp Williams should be identified and addressed. These would include more intense residential developments and commercial developments that will generate large amounts of traffic. For example, such future land uses that include planned community, heavy commercial, medium-density residential, mixed-use, and transit-oriented development may not be compatible with military missions.

Planned community, and any type of “holding” category, may also be considered incompatible. These plan designations are intended to promote developments that incorporate residential and commercial and often have higher densities of both, while creating inclusive and walkable communities. However, noise and other nuisances from military operations can negatively impact these developments.

LU-3 Development pressures within close proximity to Camp Williams.

Local jurisdictions continue to receive development applications for master planned developments in areas that are within close proximity to Camp Williams. In addition, schools may be located in areas that are immediately adjacent to Camp Williams. These types of sensitive land use developments have the potential to create long-term incompatibilities with operations on Camp Williams.

Compatibility Assessment

As stated in previous chapters of this report, Camp Williams is located at the Point of the Mountain, one of the fastest growing regions in Utah. With that growth in population comes expansion of employment, housing and transportation systems. According to forecasting estimates to 2050, population growth will be between 9,000–19,000 residents, and employment is expected to grow by 9,000-15,000 jobs within the areas surrounding Camp Williams. Housing units are expected to increase by more than 3,000 units, and the regional transportation system will have increased capacity on new freeways directly adjacent to Camp Williams.

According to the Salt Lake County West General Plan, development has been rapid in surrounding communities, and more people are living and working near Camp Williams in the last decade. Population between 2010 and 2020 for communities within the Study Area increased a combined 75%. This trend does not appear to be changing as more development will be needed to accommodate the projected future increases.

Developments adjacent to Camp Williams have historically been either agriculture or low density residential. Several surrounding communities have kept those development patterns in effect in future land use plans. Other communities have been increasing development densities for commercial and residential adjacent areas designated for military training operations. This increase will present challenges to both ongoing military operations and the safety and wellbeing of new residents.

Master planned communities and large-scale subdivisions present the biggest incompatibility issues for Camp Williams. Master planned communities often plan for mid- to high-density residential as well as large commercial centers. For example, the neighboring City of Lehi has a large amount of land zoned for “Planned Community” and “Traditional Holdings (TH-5).” While much of the TH-5 land has not been annexed into the city, future developments will be similar to the medium-density residential and mixed use existing in other areas of the city. The



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planned community zoning is intended for master planned communities and typically includes a mix of medium- to high-density residential along with regional commercial.

Public safety should be a major concern for communities when proposing increased developments close to military operations. Along with noise concerns, there is also the possibility of training accidents. In 2010, a fire caused by machine gun training exercises at Camp Williams caused the evacuation of 1,600 homes and burned more than 3,700 acres. While these events are not common, surrounding communities should inform new residents that there is the possibility of these incidents occurring.

Compatibility Findings Assessments

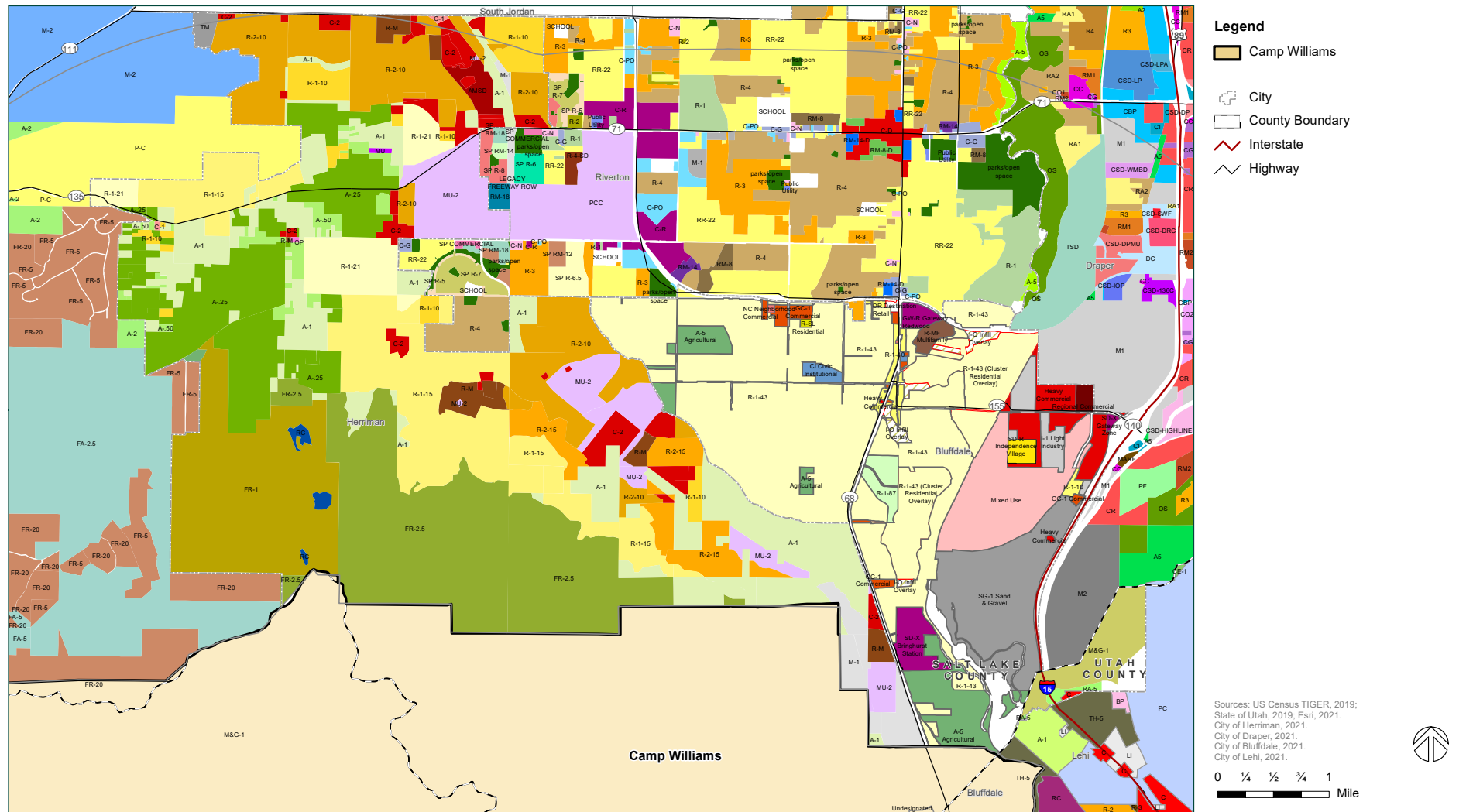


Figure 5.5 Zoning - Northeast Development Area

Source: US Census Bureau

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Legislative Initiatives (LEG)

Legislative initiatives are proposed changes in relevant policies, laws, regulations, or programs that could have a significant impact on one or more substantive areas of concern to both the military installation and to the stakeholder communities. The focus of this compatibility factor is on initiatives with general and broad implications.

LEG-1 Absence of state legislation addressing compatible planning around military installations encourages unregulated/uncontrolled development near military installations.

Utah State Land Use Planning Laws do not consider the impacts of military training operations on the general public, nor do they account for the community growth impacts and activities on military mission readiness and training.

Compatibility Assessment

For many years, military and civilian communities in Utah have had minimal land use compatibility conflicts. However, as community development intensifies and the military missions change, more concerns are being identified on the part of the military installations and nearby jurisdictions. As new weapons systems are introduced and as military training operations change, the mission footprint of an installation can grow, in some cases beyond the boundaries of the fence line. One example of where the mission footprint can extend beyond the installation boundary is noise. Sensitive land uses such as residential, schools, hospitals, and places of worship are incompatible with higher levels of noise, often found nearby military training ranges such as Camp Williams. Community concerns over quality of life have the potential to impact the ability of Camp Williams to carry out its mission.

At the same time, community development in Utah, and specifically in the region around Camp Williams, continues to grow rapidly. This growth has already and will continue to encroach on the installation, both in terms of the physical boundary and the larger mission footprint. An

example of incompatible development impacts on military training ranges is light pollution. Light pollution from commercial, residential and industrial activities can hinder nighttime training activities at Camp Williams, where dark skies are needed to enable ground and helicopter training operations.

The military consistently recommends compatible land use activities around military installations. The purpose is to protect both the military mission and public health and safety. The military has adopted planning processes that can provide important information that local governments can use in their planning processes. The findings of such practices help guide the military to reduce adverse impacts their training has on neighboring jurisdictions, while also informing the neighboring jurisdictions of potential concerns, their sources, and anticipated impacts.

In most cases, local jurisdictions work with nearby Utah military installations to avoid incompatible land use and the resulting impacts. In Utah, jurisdiction general plans that guide future land use and zoning ordinances that mandate specific actions, are examples of planning tools that can help mitigate incompatible development near installations.

Many states have also adopted planning legislation intended to reduce the potential for community growth that encroaches on military installations resulting in undesirable impacts for both the public and the military. Arizona has enacted a requirement for local governments in the vicinity of military airports to consult with the military regarding land use decisions with the potential to impact the operations. In Texas, any jurisdiction proposing to adopt a plan or regulation that has the potential to impact a military installation or its training activities, must first provide an opportunity for the military to identify concerns and submit feedback on the proposed action. North Carolina requires local governments to provide notice to military installations within five miles of any proposed zoning ordinance change. Jurisdictions are required to consider the military installation's input prior to making a decision on the proposed action.



West Traverse Mountain Compatibility Area Study

Utah does not have any state regulations that require local jurisdictions to coordinate with nearby military installations on land use planning actions where there is the potential to impact the installation's mission and training activities.

Light and Glare (LG)

The Light and Glare compatibility factor refers to man-made lighting (streetlights, airfield lighting, building lights) and glare (direct or reflected light) that disrupts vision. Light sources from commercial, industrial, recreational, and residential uses can cause excessive illumination and glare at night, impacting the use of military night vision devices and aircraft operations. Conversely, high intensity lights in military areas, such as airfield lighting, may have a negative impact on adjacent communities.

Key Terms

Glare. Glare is the presence of excessively bright natural light, such as direct or reflected sunlight, and some artificial light, such as from sport field and stadium lighting and solar panel installations. Glare reduces visibility and can impair vision when very intense.

Light pollution. Light pollution is the artificial brightening of the sky that results from development, including from streetlights and other man-made light sources.

Light Pollution Map Info. Light Pollution Map Info is a computer application that projects light pollution data on top of other data layers, such as roadway maps.

Light radiance. Light radiance measured in radiance units ($\text{W}/\text{cm}^2 \cdot \text{sr}$) is the radiant flux emitted, reflected, transmitted, or received by a surface, per unit solid angle, per unit projected area.

Solar Energy Systems. Solar energy systems are solar-powered, electrical power generation systems that include photovoltaic (PV) systems, solar hot water (SHW) systems, and concentrated solar power (CSP).

Trespass lighting. Trespass lighting is light that encroaches onto neighboring properties.

Visible Imaging Infrared Radiometer Suite (VIIRS). VIIRS collects visible and infrared imagery via satellite. The data is used to support land-, ocean-, and cloud-centric science. Improving scientists' understanding of climate change is one domain where VIIRS data is used. The data is also used to project light pollution around the world using the "Light Pollution Map Info" computer application.

Technical Background

Under dark sky conditions, the use of night vision goggles (NVG) allows military personnel to view objects up to 984 feet (300 meters) away; however, nearby sources of light can decrease NVG effectiveness to 164 feet (50 meters) or less, depending on the amount of light and how close it is. Off-installation lighting, such as streetlights and other elevated lights, produce a halo effect around objects that further reduces visibility and resolution for air and ground personnel. The amount of ambient light experienced on the ground is a function of several variables:

- Intensity of nearby light sources (up to 20 miles away)
- Distance from the light sources
- Light source spectra (blue light decays faster in the atmosphere)
- Cloud density
- Cloud height
- Relative humidity

Compatibility Findings Assessments

Proximity to a community has a significant effect on the amount of light pollution that is perceived. For example, if proximity to lighting is increased two-fold, sky glow from the lighting will appear roughly six times brighter. The use of VIIRS data allows the quantification of light pollution in any location around the world. The VIIRS data shows the light pollution as measured in radiance units ($\text{W}/\text{cm}^2 \cdot \text{sr}$). The larger the number, the greater the light pollution. As expected, greater amounts of light pollution are associated with cities and other developed areas. The application of VIIRS data in developing light pollution maps can provide a useful reference tool in understanding the location and extent of light pollution in a particular region and the potential impacts to military installations and communities.

Sky glow from communities typically diminishes in the later hours of the night when businesses close and some lights are turned off. It follows that the area and amount of light pollution can and will increase as development continues to progress outward from a community. Increased light pollution can cause an increase in the amount of sky glow and ultimately create compatibility issues with military missions.

In general, the following trends have been demonstrated.

- Denser urban development leads to greater potential for light intrusion.
- Developments close to an installation lead to greater potential for light intrusion.
- Studies by the United States Army Corps of Engineers indicate that light pollution has an impact on nighttime military training activities in locations upwards of 10 miles away from an installation.

LG-1 Urban development generating light pollution and glare can create incompatibilities with Camp Williams.

UTARNG helicopter pilots and ground personnel use night vision goggles to train. The nighttime presence of intense light and glare (sky glow) from civilian development can reduce or completely restrict visibility for aviators and ground personnel.

Compatibility Assessment

The airspace over and around Camp Williams is used to support helicopter training operations including those in support of ground training activities. One of the critical flight operations involves nighttime training that ensures aircrew readiness for real world conditions expected during combat deployments and civil emergencies.

Nighttime training is an important part of Camp William's mission and degradation of the ability to effectively train at night may negatively affect its training mission and military unit readiness. As such, a concern for light pollution and its potential impacts on nighttime training operations was identified.



Glare hazards for aviation, FAA, 2015

West Traverse Mountain Compatibility Area Study

Helicopter operations at Camp Williams typically involve landing and takeoffs from the Draper Headquarters (HQ) facility and training activities over the ranges to the west. Over the training ranges helicopters operate at very low levels. Some of this training is conducted in darkness and makes use of NVGs. While some nighttime lighting is a cultural phenomenon and simulates lighting found in real-world combat environments, excessive ambient light on and around Camp Williams can degrade training conditions. The same holds true for soldiers conducting ground-based nighttime training activities. As part of military training at Camp Williams, soldiers operating on the ground are trained in nighttime conditions making use of NVGs and other devices designed to function in a dark sky environment. Excessive ambient light can result in the inability to conduct these training activities.

In general, light pollution (glare, sky glow and light trespass) in the area around Camp Williams is attributable to a variety of factors to include land use and types of development; the quantity, types, and intensity of illumination; and installation of outdoor light sources (artificial nighttime illumination). Light pollution is created by both near and distant light sources. Unshielded outdoor lighting contributes significantly to glare. Unshielded lighting in the distance and uncontrolled uplighting (lighting which is directed upward into the sky or extends above the horizontal plane of a light fixture) contribute significantly to overall night sky degradation in a particular area. Suburban residential and commercial development, if not developed to Dark Sky codes, can add significant volume of light to previously rural and undeveloped areas. More development in already developed areas (suburban and urban transition zones) can contribute to increased sky glow within a locality.

Figure 5.7 shows the levels of light pollution at Camp Williams and the surrounding region. In general, areas with light radiance levels of 3.00 and lower are compatible with nighttime training operations at Camp Williams. Table 5.3 provides information on light radiance and compatibility with military nighttime training at Camp Williams. As

depicted on the Figure 5.7 map, presently the area directly over the Camp Williams training ranges (shaded in blue) has very low levels of light radiance, less than 1.01. Moving from west to east across the installation the level of light pollution increases with the highest radiance levels of 20.1 to 40.0 around the cantonment area on the eastern edge of Camp Williams. There is one small area on the range where the range maintenance facilities are located with a light radiance greater than 3.00.

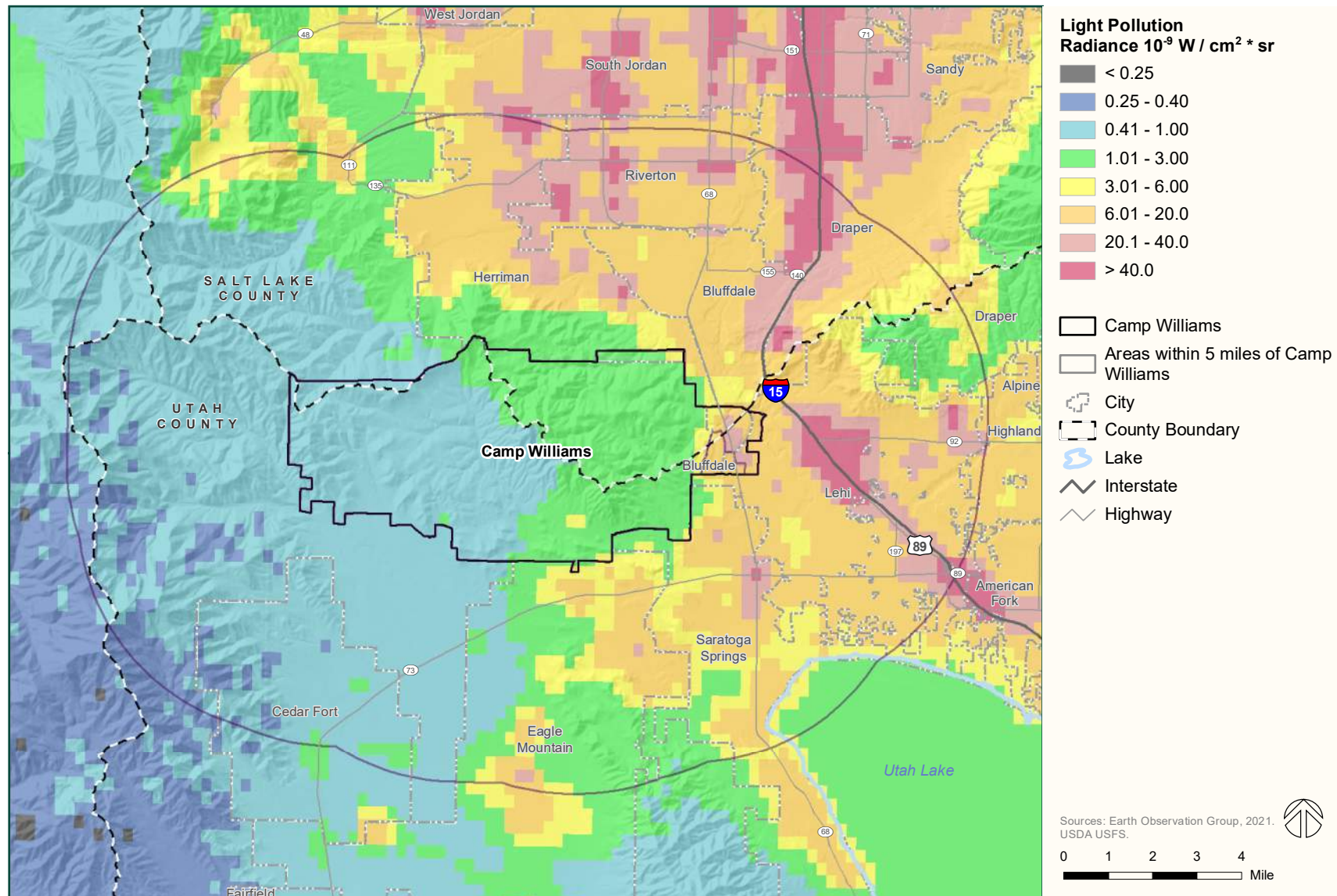
In the jurisdictions around Camp Williams to the north and east there are areas where the light radiance exceeds 6.00, and in some cases exceeds 40.00. The communities of Lehi, Bluffdale, Herriman, Saratoga Springs, and Eagle Mountain all have relatively higher levels of light pollution in the immediate area around Camp Williams.

Table 5.3 Light Radiance and Nighttime Training Compatibility

Light Radiance Levels	Compatibility with Camp Williams Nighttime Training Operations
>3.01	Areas considered optimal and compatible for military nighttime training
3.01-6.00	Areas which may or may not be compatible, depending on proximity, with military nighttime training
6.01-20.00	Areas generally exceed required dark sky requirements for nighttime training conditions
20.01-40.00	Areas exceed ambient light pollution levels for nighttime training conditions
>40.00	Areas may potentially create serious impacts for current and future nighttime military training

Source: Matrix, 2022.

Compatibility Findings Assessments





Noise (NOI)

Sound is defined as the mechanical energy transmitted by pressure waves in a compressible medium, such as air. More simply stated, sound is what we hear. As sounds reach unwanted levels, this is referred to as noise. The central issue with noise is the impact, or perceived impact, on people, animals (wild and domestic), and general land use compatibility. Exposure to high noise levels can have a significant impact on human activity, health, and safety. The decibel (dB) scale is used to quantify sound intensity. To understand the relevance of decibels, normal conversation often occurs at 60 dB, while an ambulance siren from 100 feet away is approximately 100 dB. Noise associated with military operations (arrival/departure of military aircraft, firing weapons, etc.) may create noises in higher dB ranges.

Key Terms

Air Overpressure. Air overpressure, or noise, is the energy released from a blast that moves through the air. It is measured in decibels which can also be converted to pounds per square inch.

A-weighted Decibel (dBA). The dBA is the most commonly weighted sound filter used to measure perceived loudness, versus actual sound intensity. The human ear responds differently to different frequencies. For example, the human hearing system perceives mid-frequency sounds as louder than low- and high-frequency sounds. To accommodate this condition when measuring sound levels, filters need to be installed into sound meters. The results are a more accurate measurement of sound as experienced through the human hearing system.

BNOISE2. BNOISE2 is the U.S. Army modeling program used to calculate noise levels generated by firing large caliber weapons (greater than .50 caliber) and high-explosive charges.

C-weighted Decibel (dBC). The dBC scale is often used to characterize low-frequency sounds capable of inducing vibrations in buildings or

other structures. The DoD commonly uses the dBC scale to characterize large arms and demolitions noise levels.

Day-Night Average Sound Level. (DNL). DNL represents an average sound exposure over a 24-hour period. During the nighttime period (10:00 p.m. to 7:00 a.m.), averages are artificially increased by 10 dB. This weighting reflects the added intrusiveness and greater disturbance potential of nighttime noise events due to the fact that community background noise typically decreases by 10 dB at night.

Decibel (dB). A dB is the physical unit commonly used to describe noise levels. It is a unit for describing the amplitude of sound, as heard by the human ear.

Ground Vibration. Ground vibration is measured as peak particle velocity and is the speed at which vibrations move through the ground (not the displacement of the ground).

Impulse Sound. Impulse sound is of a short duration (typically less than one second) and high intensity. Impulse sound is characteristically associated with such sources as explosions, impacts, firearm discharge, supersonic aircraft passing (sonic booms), and many industrial processes.

Impulsive Peak Noise Levels (PK15 [met]). Noise may be experienced outside of the noise zones from infrequent loud events that can lead to complaints even if the average noise levels are “compatible.”

These “peak contours” for single events show the expected sound level when a weapon is fired regardless of whether one or one thousand shots are fired. Since weather conditions can cause noise levels to vary significantly, a range of peak levels are calculated based on weather conditions that favor or hinder sound propagation. The peak noise contours are referred to as the “PK15 (met)” contours. This means that peak level depicted by the contour would be exceeded 15% of the time. The reason for plotting the PK15 (met) versus the “average” peak is that if the average peak were plotted, weather conditions would be expected to cause a single event to reach levels higher than portrayed by the

contours 50% of the time, and conversely, 50% of the events would be lower. By plotting the PK15 (met), events would be expected to fall within the contours 85% of the time. This gives the installation and the community a realistic means to consider the areas impacted by testing and training noise without putting stipulations on land that would only receive high sound levels under infrequent weather conditions.

Noise Contour. Noise contours consist of noise impact lines constructed by connecting points of equal noise levels, measured in dB. They identify areas on a map that will experience particular dB noise levels.

Noise-Sensitive Uses. Noise-sensitive uses are locations and uses typically more sensitive to noise, including residential areas, hospitals, convalescent homes and facilities, schools, libraries, churches, recreational areas, and other similar land uses.

NOISEMAP Program. The DoD noise models are based on NOISEMAP technology, using linear acoustics and an integrated formulation to determine the impact of noise.

Peak Sound Level (dBP). The dBP is a flat-weighted scale that can be used to measure noise from small arms (less than or equal to 20 mm) firing, heavy artillery, and explosives. Peak blast noise contours are classified by 115 dBP and 130 dBP. Peak blast noise contours are for single events. Moderate risks of noise complaints are associated with 115 dBP, and high risks of noise complaints are associated with 130 dBP.

Sensitive Land Uses. Sensitive land uses are uses, such as residential, medical, education, or religious, that may be particularly susceptible to impacts from loud noises.

Small Arms Range Noise Assessment Model (SARNAM). The U.S. Army SARNAM is used to generate noise contours for small arms (.50 caliber and below) ranges.

Technical Background

It is important to understand that there is no single way to measure sound due to variations used by different entities when conducting sound studies or sound modeling. Sound is characterized by various parameters that include the oscillation rate of sound waves (frequency), speed of propagation, and pressure level or energy content (amplitude). The sound pressure level has become the most common way to characterize the loudness of an ambient sound level. The dB scale is used to quantify sound intensity.

Because sound pressure can vary by over one trillion times within the range of human hearing, a logarithmic loudness scale, i.e., the dB scale, is used to present sound intensity levels in a convenient format.

The human ear is not equally sensitive to all frequencies within the entire spectrum, so noise measurements are weighted more heavily within those frequencies of maximum human sensitivity in a process called “A-weighting” (dBA). The human ear can detect changes in sound levels of approximately 3-dBA under normal conditions. Changes of 1- to 3-dBA are typically noticeable under controlled conditions, while changes of less than 1-dBA are only discernible under controlled, extremely quiet conditions. A change of 5-dBA is typically noticeable to the average person in an outdoor environment. Figure 5.8 summarizes typical A-weighted sound levels for a range of indoor and outdoor activities.

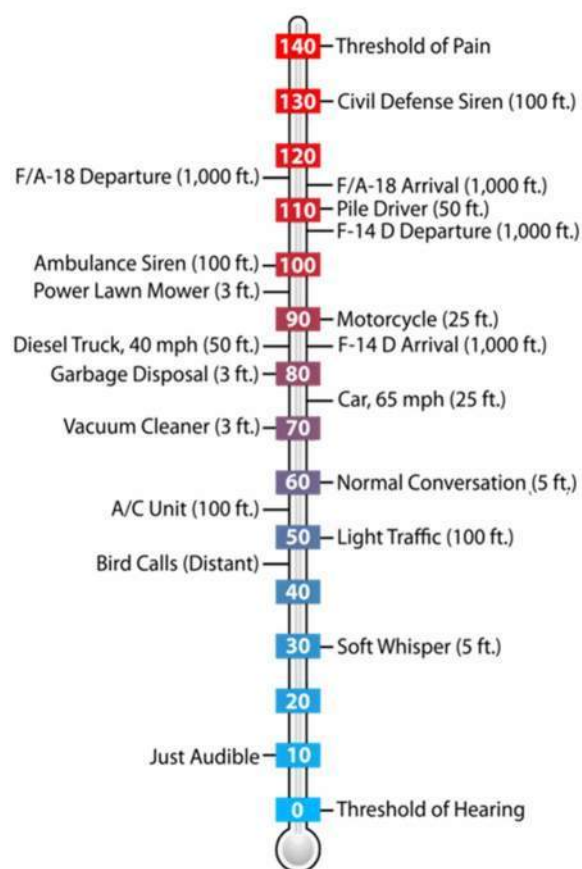
Environmental noise fluctuates over time. While some noise fluctuations are minor, others can be substantial. These fluctuations include regular and random patterns, how fast the noise fluctuates, and the amount of variation.

Weather patterns can have a strong effect on how far sound travels and how loud it is. Certain weather events can change the consistency of the air and either allow sound to travel further and be louder, or impede the distance traveled and the level at which the sound is perceived. Temperature and wind velocity are prime examples of factors that can

West Traverse Mountain Compatibility Area Study

affect sound travel. Sound tends to travel further in cold temperatures. Specific combinations of temperature and wind direction can create atmospheric refraction that also impacts sound perception. Atmospheric refraction occurs when atmospheric conditions bend and/or focus sound waves towards some areas and away from others. When describing noise impacts, it is common to look at the average noise levels over an entire average day.

Figure 5.8 Sound Level Comparison in dB



NOI-1 Helicopter overflights above residential homes can create noise and vibration impacts.

The Cedar Fort community observes both day and night helicopter operations directly above residential homes. Military rotary-wing aircraft (helicopters) generate noise and vibration impacts off base. Military helicopters transiting from/to West Jordan and other training areas within the region generate noise and vibration, especially within areas located under Camp Williams' flight corridors.

Compatibility Assessment

During stakeholder interviews, Cedar Fort officials indicated that helicopters operating in the airspace around Camp Williams generate noise and vibration that impact the community residential areas.

The airspace over and around Camp Williams is used to support helicopter training operations including those in support of ground training activities. Six types of helicopter aircraft are operated at and around Camp Williams:

- AH-64 Apache
- UH-60 Black Hawk
- UH-72 Lakota
- CH-47 Chinook

These are used in a number of different types of exercises:

- General observation of military training
- Nap-of-the-earth training
- Training involving carrying internal and external loads
- Wildland fire operations
- Night vision goggle exercises

Compatibility Findings Assessments

- Tactical (air cavalry) aviation training
- Rotary-wing combat assaults, including rappelling and personnel parachute operations

Utah Army National Guard military helicopters traveling to and from Camp Williams from the Salt Lake Airport in West Jordan typically fly between 750 and 1,000 feet above ground level (AGL) during their transit including above populated areas. Helicopters entering or exiting Camp Williams may fly as low as 200 feet over areas that are adjacent to the installation and fall within identified flight corridor ingress and egress points. Helicopter flight corridors provide approaches to Camp Williams



Helicopter conducting wildland fire operations at Camp Williams, UTARNG, 2014.

from the north over Herriman City and Bluffdale, from the south near Eagle Mountain, and from the southwest near Cedar Fort. Helicopter operations at Camp Williams typically involve landing and takeoffs from

the Draper HQ facility and training activities over the ranges to the west. Over the training ranges helicopters operate at very low levels. The military flying activities at Camp Williams are typically a frequency and pattern compatible with land use in the surrounding areas. However, there are still potential incompatibilities associated with singular event overflight operations that involve helicopters flying in the airspace over and around Camp Williams. Table 5.5 shows the ground track distance that noise can impact ground-based receptors. Certain percentages of the population will be annoyed by overflights of UH-60 helicopters flying at 500 feet AGL extending out to approximately one third of a mile from the point directly below the helicopter. In addition to people, low flying aircraft including helicopters may impact animals, such as cattle grazing underneath the flight path of the operation.

Larger helicopters, such as CH-47, create noise levels that can potentially impact receptors up to one mile away. Table 5.4 shows the noise levels created by various helicopters and the associated A-weighted decibel noise levels at different distances from the receptors on the ground. Generally, flying faster and closer to the receptor results in higher noise levels. For example, a UH-60 helicopter flying at 70 knots indicated airspeed (KIAS) creates 86 dBA 200 feet from the receptor, whereas at 2,500 feet from the receptor it generates a noise level of 61 dBA.



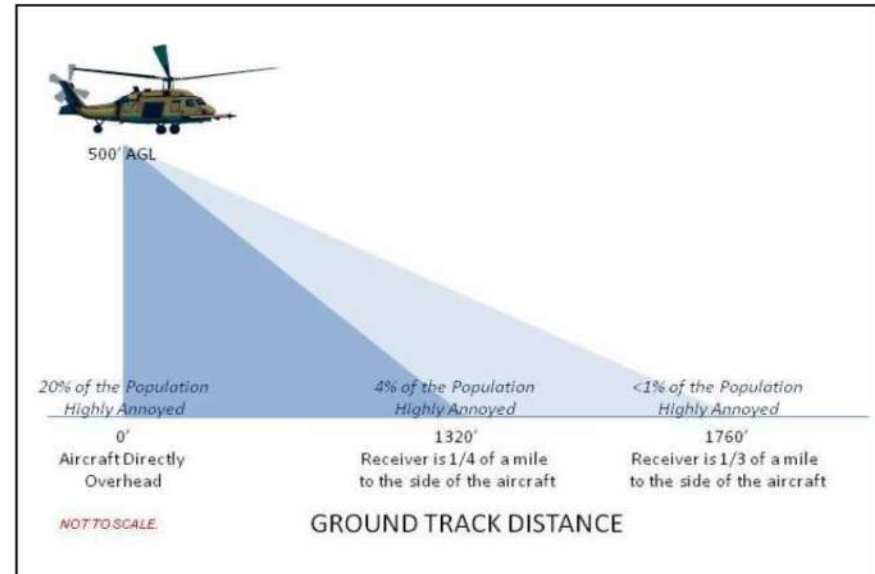
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Table 5.4 UH-60 Overflight Noise Potential

Slant Distance in Feet	Maximum dBA Level		
	UH-60 70 KIAS	UH-72 123 KIAS	CH-47 Heavy 120 KIAS
200	86	87	98
500	77	78	89
1,000	71	72	83
1,500	67	68	79
2,000	64	65	76
2,500	61	62	74

Source: VAARNG ICUZ Study, 2017

Table 5.5 Helicopter Noise Levels at Various Distances



Source: VAARNG ICUZ Study, 2017

Low-level flights create noise and vibration, which can be heard and felt in off-base areas. The noise impacts of helicopters are not generally quantitatively measured as is the case with fixed wing aircraft, therefore there are no noise contours associated with aviation operations that can be used to determine the scale of the impact. The UTARNG flies in a “neighbor-friendly” manner, which means that they intentionally avoid flying at low levels over-populated areas. However, off-base areas near the ingress and egress points on Camp Williams may be impacted by noise and vibration from helicopters entering and departing the installation.

Compatibility Findings Assessments

NOI-2 Noise complaints are received from communities around Camp Williams.

Camp Williams receives noise complaints when significant live-fire or artillery-fire training schedules extend into evening hours and/or due to weather conditions.

Compatibility Assessment

Military training at Camp Williams generates varying levels of noise, some of which can be heard in nearby communities. Weapons firing can be heard as far away as Draper under certain weather conditions such as low-level cloud cover. Activities conducted within the cantonment area of the camp generate noise; however, this noise is typically at lower levels and would not create complaints from nearby communities.

Camp Williams has multiple sources of range impulse noise that is typically very loud but of short duration:

- Aerial gunnery operations
- Large caliber weapons
- Small arms ranges
- Explosions from munitions detonation

Camp Williams conducts most of the impulse noise generating operations on the range training areas located on the central and western portions of the installation.

Camp Williams also generates steady-state noise from different range training activities:

- Light vehicle ground operations
- Heavy vehicle ground operations
- Helicopter flights

- Other fixed wing aircraft flights



Heavy artillery firing on Camp Williams range, UTARNG, 2021.

Live-fire range training that involves large caliber weapons including artillery, can often generate noise levels heard beyond the installation boundaries. The noise level and distance at which it can be heard is dependent on many variables including weather conditions. Temperature, wind velocity/direction, and cloud cover can all affect the level of noise heard in communities near Camp Williams.

Another factor affecting how noise is perceived in nearby communities is whether it occurs during daytime or nighttime. During the night environmental conditions can sometimes increase noise levels or cause residents to become more concerned about the noise.

According to the 2006 Camp Williams Noise Management Plan, artillery and mortar weapons firing is limited to the hours of between 7:00am

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and 11:50pm. The public is notified at least one month in advance of scheduled artillery and mortar firing training.

The Utah National Guard website, <https://ut.ng.mil/Contact-Us/>, provides a link for members of the public to make noise inquiries. A specific phone number for noise concerns related to Camp Williams is listed. The UTARNG provides notices to the public about upcoming activities that may generate elevated levels of noise using local media outlets, social media, and other means. One such online system is the AlertSense Alerts app, which sends information to members of the public that have signed up to receive advance notifications of Camp Williams noise alerts.

NOI-3 Live fire, artillery fire, and munitions demolition on base generates off base noise and vibration.

Noise studies indicate that military training on demolition and artillery firing ranges generates noise and vibration impacts that are experienced off base. Sensitive land uses such as residential, hospitals, and schools may be incompatible in these areas.



Public AlertSense Alert for Camp Williams noise, UTARNG, 2022.

Compatibility Assessment

In addition to the numerous practice ranges for demolition, aerial gunnery, mortars, artillery, grenades, automatic weapons, and small arms, there are five artillery firing points in the training area. Use of these firing points creates 'impulse noise.' Artillery firing entails firing large shells (105 to 155mm) from howitzers or mortars. At Camp Williams, artillery firing entails simultaneously firing multiple guns. The artillery battalion fires approximately 700 to 1,400 shells into the impact area every year. Artillery fire training generates the most noise complaints because these sounds tend to travel farther, are harder to mitigate, and they are accompanied by vibration.

In 2000 the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) conducted a noise study that indicated live-fire noise profiles from large caliber weapons do extend beyond the Camp Williams boundaries. The majority of the off-base noise impacted areas to the northeast and southwest.

Compatibility Findings Assessments

Studies done on vibration have shown that homeowners typically become concerned about potential structural damage due to rattling when the peak dB exceeds 120 dBP; however, actual damage is not likely to occur until a level of 150 dBP is reached. According to the Camp Williams' Installation Operational Noise Management Plan (IONMP), while small arms firing ranges can produce noise that is heard off base, it is the impulsive noise associated with firing artillery and mortar weaponry that creates the greatest noise, and this noise travels in all directions.

According to Range Control on Camp Williams, noise complaints happen most often during artillery live fire or demolition operations, and complaints increase greatly when there is more than 50% cloud cover. Most of the complaints come from the east bench of the Salt Lake Valley (East of 1300 East). Atmospheric conditions seem to be the biggest factor for noise complaints as well as the time of day. Camp Williams will most likely receive complaints about noise when training occurs late at night and during early morning hours.

Table 5.6 provides excerpts from Army guidelines regarding relevant land uses in small arms noise zones that are applicable for Camp Williams. The guidelines suggest whether a land use is compatible or incompatible; however there can be exceptions and/or restrictions associated with the recommendation. For example, the guidelines may identify sound attenuation criteria for compatibility. In addition, existing land uses that are inconsistent with the land use guidelines, may be considered pre-existing non-conforming. Sensitive land uses are incompatible where noise is greater than 104 dBP and generally incompatible in areas of 87-104 dBP without sound mitigation. Figure 5.9 shows the small arms noise contours for Camp Williams. Noise levels greater than 104 dBP are contained within the installation boundary, whereas noise contours between 87-104 dBP extend off the installation in the northeast, northwest, and southwest.

Table 5.6 Summary of Army Land Use Recommendations in Small Arms Noise Zones

Land Use	Land Use Compatibility	
	Noise Zone 87-104 dBP	Noise Zone >104 dBP
Residential	Incompatible with exceptions	Incompatible
Religious	Compatible w/ restrictions; sound attenuation	Incompatible
Education	Compatible w/ restrictions; sound attenuation	Incompatible
Retail Trade	Compatible w/ restrictions; sound attenuation	Compatible w/ restrictions; sound attenuation
Medical	Incompatible	Incompatible
Agriculture	Compatible w/ restrictions	Compatible w/ restrictions
Livestock	Compatible w/ restrictions	Incompatible
Forestry	Compatible w/ restrictions	Compatible w/ restrictions

Source: U.S. Army Public Health Center, ICUZ Land Use Guidelines, 2017.

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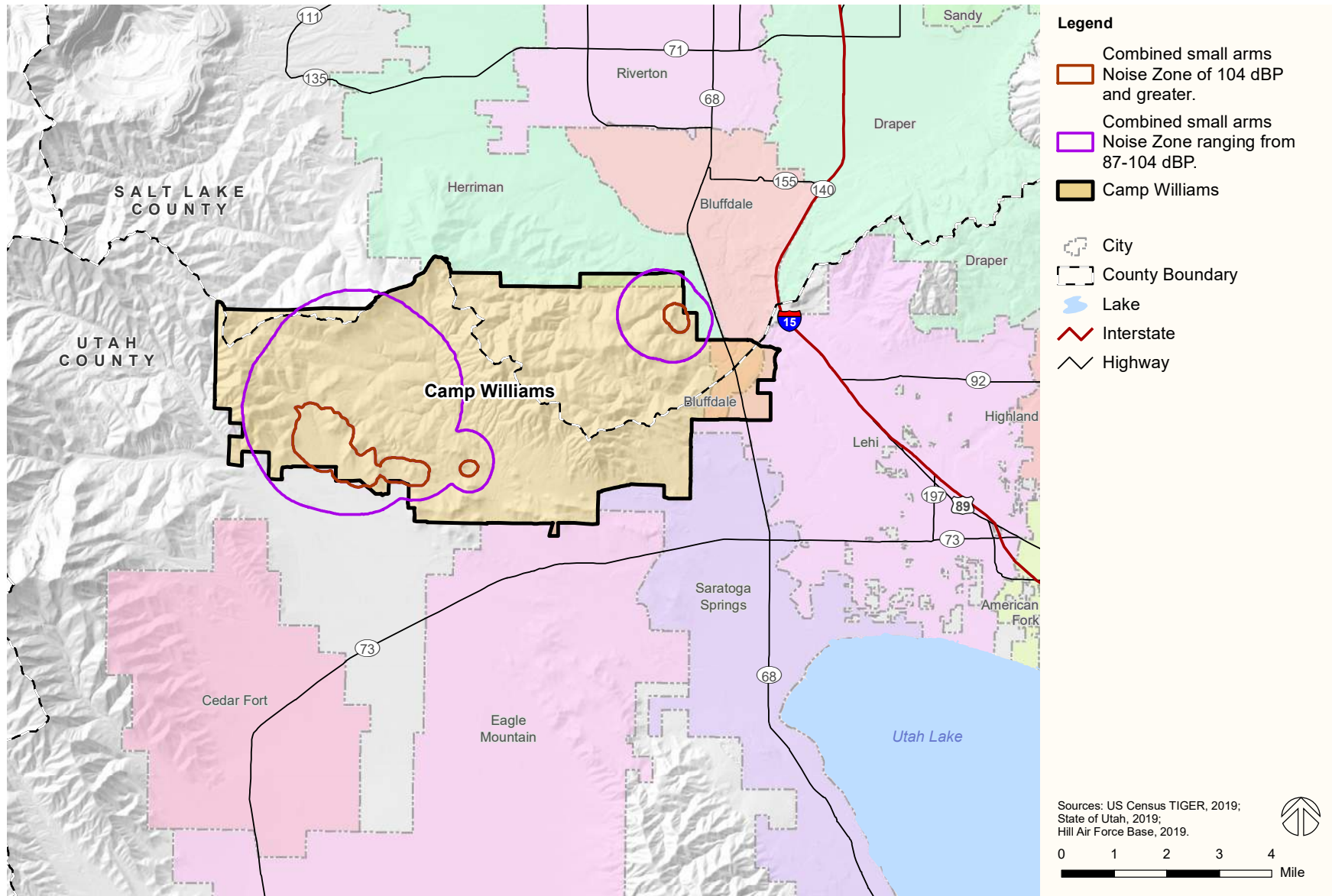


Table 5.7 provides excerpts from Army guidelines regarding relevant land uses in large arms/demolition noise zones that are applicable for Camp Williams. The guidelines typically suggest if a land use is compatible or incompatible; however, there can be exceptions and/or restrictions associated with the recommendation. For example, the guidelines may identify sound attenuation criteria for compatibility. Sensitive land uses are incompatible where noise is greater than 62 dB.

Table 5.7 Summary of Army Land Use Recommendations in Large Arms/Demolition Noise Zones

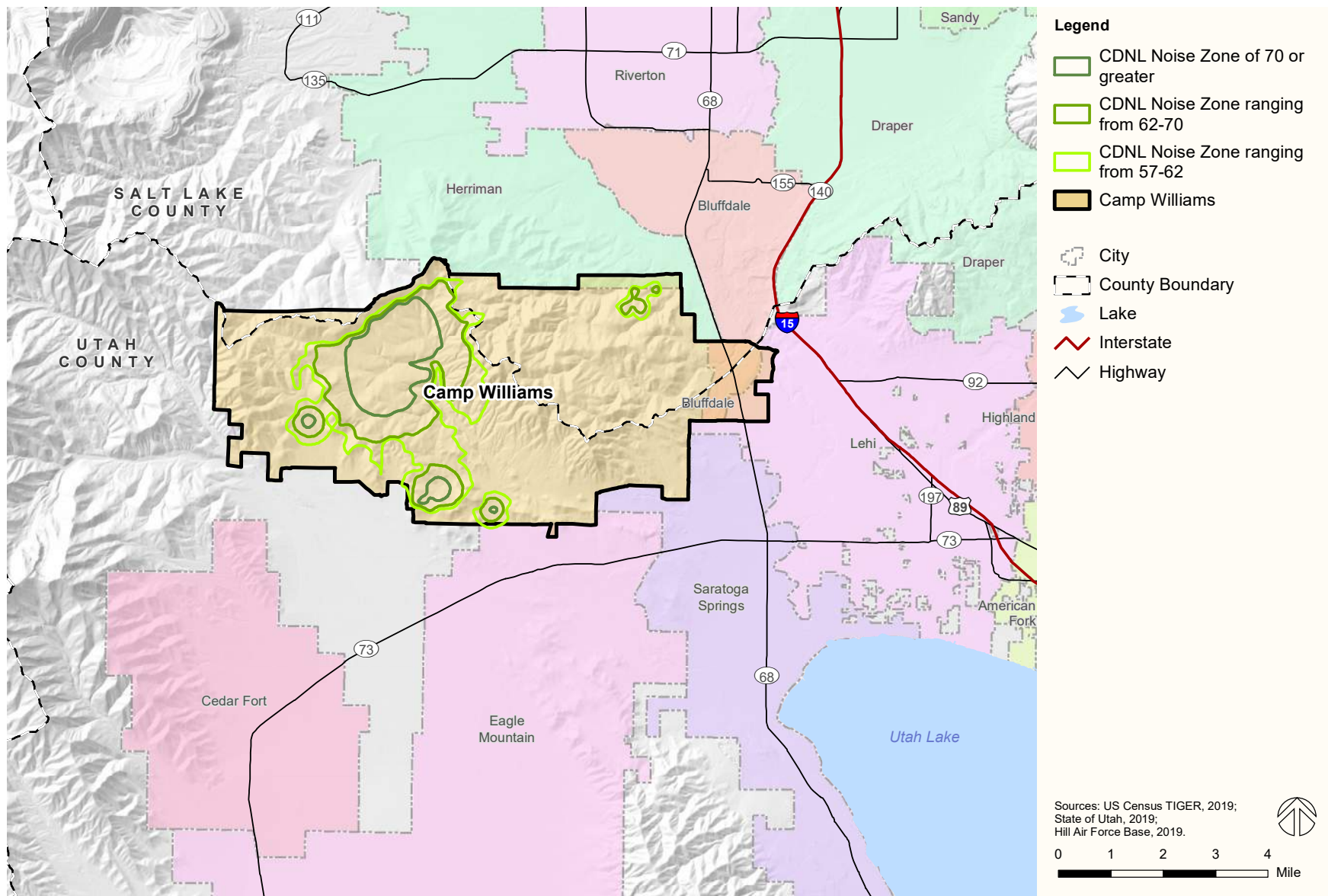
Land Use	Land Use Compatibility		
	CDNL/CNEL 57-62 dB	CDNL/CNEL 62-70 dB	CDNL/CNEL >70 dB
Residential	Compatible	Generally Incompatible	Incompatible
Religious	Compatible	Incompatible	Incompatible
Education	Compatible	Incompatible	Incompatible
Retail Trade	Compatible	Compatible	Incompatible
Medical	Compatible	Incompatible	Incompatible
Agriculture	Compatible	Compatible	Compatible
Livestock	Compatible	Incompatible	Incompatible
Forestry	Compatible	Compatible	Compatible

Source: U.S. Army Public Health Center, ICUZ Land Use Guidelines, 2017.

Figure 5.10 shows the large arms/demolition noise contours for Camp Williams. All large arms/demolition noise contours are contained within the installation boundary except for a small area of 57-62 dB on the south.



West Traverse Mountain Compatibility Area Study



Matrix

:] [i fY) ' % \$ Large Arms Noise Contours - CDNL

Camp Williams also generates large caliber arms/demolition peak sound level noise impacts that extend off the installation. Peak noise levels result from single loud events. Unfavorable weather conditions can enhance the ability of sound to travel over longer distances and result in receptors perceiving the noise differently based on peak sound levels. Table 5.8 provides information on how receptors may perceive peak noise from single events.

Table 5.8 Perceptibility of Single Event Based on Peak Sound Level

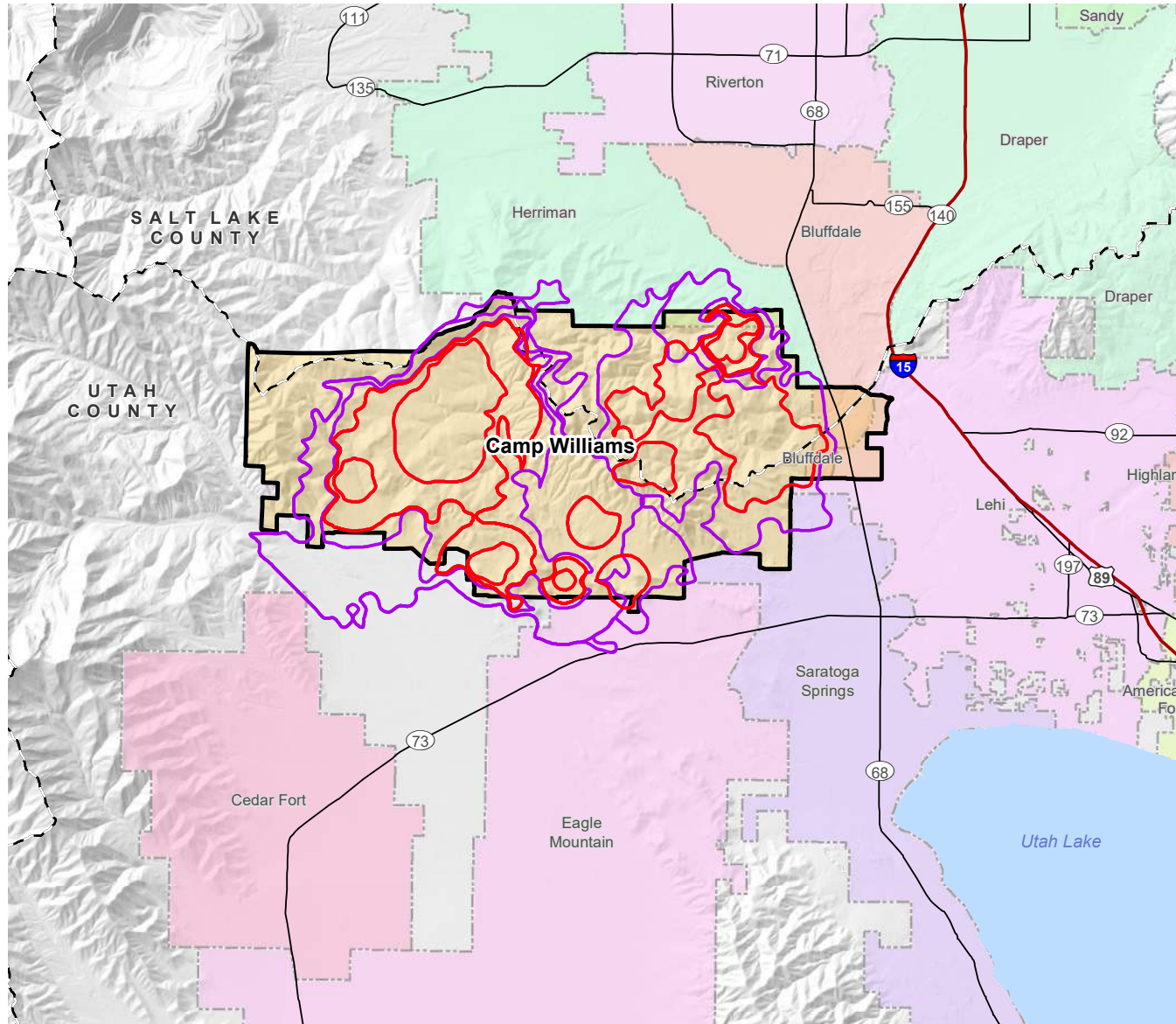
Noise Perceptibility	dBP
May be audible	<115
Noticeable/distinct	115-130
Very loud/may startle	>130

Source: U.S. Army Public Health Center, ICUZ Land Use Guidelines, 2017.

Figure 5.11 shows the large arms/demolition peak noise contours at Camp Williams. There are areas on the north and south of the installation where the 115-130 dBP noise contours extend off the boundary. Portions of Herriman City, Eagle Mountain, and Saratoga Springs jurisdictions are within these noise contours where the sounds are noticeable and distinct to members of the public. There are also very small areas where the greater than 130 noise contours extend off the installation. These areas are on the north perimeter in southeastern Herriman City, in the southeast adjacent to Lehi City, and to the south in Eagle Mountain. Noise at this level is typically very loud and may startle community residents.



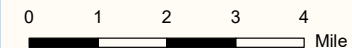
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Legend

- Exposure area of 130 Peak (dBP) and greater
- Exposure area ranging from 115-130 Peak (dBP)
- Camp Williams
- City
- County Boundary
- Lake
- Interstate
- Highway

Sources: US Census TIGER, 2019;
State of Utah, 2019;
Hill Air Force Base, 2019.



Matrix

: [[i fY) "%Large Arms Noise Contours - Peak

Public Trespassing (PT)

The Public Trespassing compatibility factor addresses public trespassing onto military installations. Trespassing is the act of entering, or remaining, on land that an individual does not have authorization or permission to access. Public trespassing addresses both intentional and unintentional trespassing on a military installation. The potential for trespassing increases with the proximity of public use areas such as hunting, hiking, off-roading, and camping areas to installation boundaries.

PT-1 On-base trespassing occurs along portions of the Camp Williams boundary.

Trespassing onto Camp Williams causes security concerns for the installation and military personnel and causes safety concerns for trespassers. The public's health, safety, and welfare are at risk, as live-fire training is routinely conducted on the installation.

Compatibility Assessment

The area around Camp Williams can be an attractive recreational destination for outdoor enthusiasts for hunting, hiking and other activities. Camp Williams personnel have identified regular instances of both unintentional and intentional trespassing on the installation. Examples of trespassing include hikers, hunters, bicyclists, and all-terrain vehicle operators. In addition, cattle regularly roam onto the installation, coming from grazing areas located outside the camp boundary. There are also reports of people cutting the Camp Williams boundary fence and trespassing onto the installation.

Camp Williams is a 24,000-acre installation located on the edge of a suburban/rural area and is situated in the western range of the Traverse Mountains. To the east of the installation the land is more developed while to the west it is relatively remote. There is more

development encroaching on the installation from the north and south as the region grows. While some of the lands on the perimeter of Camp Williams are owned by the federal government (primarily the BLM) and state government (primarily state trust lands), the majority of the surrounding land is privately owned. Much of the private undeveloped land bordering Camp Williams does not have controls that prevent unauthorized access. As a result, the public can access much of the private land for various outdoor activities which can also lead to the public illegally accessing adjacent Camp Williams property. The number of documented trespassing incidents on Camp Williams are listed by year, below:

- 2019 – seven incidents
- 2020 – ten incidents
- 2021 – five incidents

The documented incidents of trespassing are only the known incidents; there are likely many more that are unknown. The 2012 JLUS also identified serious concerns with public trespassing with over one dozen trespassing access points identified. The continued growth and development around Camp Williams has potential to increase the number of trespassing incidents along with the associated risk to trespassers and military personnel.

Hazards that unauthorized personnel may be exposed to are the primary concern related to public trespassing onto Camp Williams, particularly when entering military training range areas. Live weapons firing, demolition training and unexploded ordnance, and large military vehicle operations on the range all pose a significant risk of injury and possible death to unauthorized personnel. Another concern is the safety risk trespassers present for military personnel. Trespassing poachers often carry weapons such as bows or high-powered rifles to hunt game. The presence of unauthorized and armed persons on Camp Williams presents a potential force protection risk.

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County and local law enforcement officials work with Camp Williams to deter and detain trespassers and poachers when they are identified. However, lengthy response times makes catching and penalizing trespassers difficult.

Because Camp Williams is so large and the range areas are relatively remote, the perimeter of the installation is not completely fenced. The cost to install and maintain fencing around the entire 24,000 acres would be fairly significant. The cantonment area on the eastern end of the installation has controlled access points and is fenced, and there are other key locations where access points are gated and fencing is installed. Signs stating, “Camp Williams Military Reservation Do Not Enter,” and similar language are placed along portions of the installation boundary, particularly along the perimeter of active ranges such as impact areas and locations where there is a potential for encountering hazardous munitions.

Antiterrorism (AT) Standards authorize the commanders at all levels to enforce security measures at their will. Commanders are charged with protecting persons and property under their control. As such, numerous Unified Facilities Criteria (UFC) guidance publications outline fencing and security measures appropriate for military installations. The following are UFC criteria applicable to security engineering.

- 4-010-01 DoD Minimum Antiterrorism Standards for Buildings
- 4-020-01 Security Engineering: Facility Planning Manual
- 4-022-02 Security Engineering: Design and Selection of Active Vehicle Barriers
- 4-022-03 Security Fences and Gates
- 3-530-01 Design: Interior, Exterior Lighting, Security Lighting, and Controls



New signs and fencing along Camp Williams boundary, KSLTV.com, 2021.

The Military Handbook (MIL HNDBK 1013/10) Design Guidelines for Security Fencing, Gates, Barriers, and Guard Facilities indicates that installations should use signage at 200-foot intervals on the exterior installation fencing to inform and warn potential trespassers that there is a U.S. military installation at the specified location. All military services recognize the importance of a secured installation; however, only the U.S. Navy has published specific guidelines for the installation of warning/no trespassing signs. This could be useful guidelines for signage at Camp Williams.

Roadway Capacity (RC)

The Roadway Capacity compatibility factor addresses public trespassing onto military installations. Trespassing is the act of entering, or remaining, on land that an individual does not have authorization or permission to access. Public trespassing addresses both intentional and unintentional trespassing on a military installation. The potential for

Compatibility Findings Assessments

trespassing increases with the proximity of public use areas such as hunting, hiking, off-roading, and camping areas to installation boundaries.

RC-1 The Camp Williams Main Gate is impacted by heavy traffic during certain time periods.

The Main Gate at Camp Williams is located directly off Redwood Road/Highway 68, which is a major north-south corridor from Saratoga Springs to Salt Lake City. Limited queuing capacity at the Main Gate can result in traffic backing up onto Redwood Road, especially during rush hour traffic periods.

Compatibility Assessment

Camp Williams has limited access points for vehicle entry due to its location and nature of the installation's mission. The Main Gate is located at the intersection of SR-68 and Redwood Road. This gate provides access for all vehicles except for trucks, which access the installation along SR-68 approximately 1/4 mile north of the Main Gate. State Route-68 is a four lane, heavily trafficked roadway with a posted speed limit of 55 miles per hour in the vicinity of the Main Gate. The road is a major north/south corridor for vehicles travelling from the Saratoga Springs area to Salt Lake City. The roadway bisects Camp Williams, dividing the main cantonment area on the east from the rest of the installation to the west, including the range training areas.



Camp Williams Main Gate at the intersection of SR-68 and Redwood Road, Google Maps, 2022.

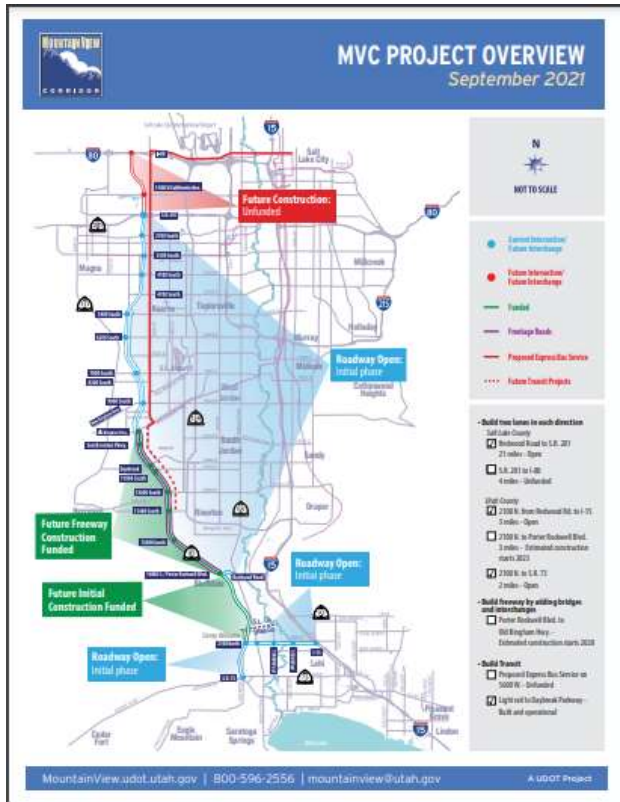
There is a lefthand turn lane (south) and a right-hand turn lane (north), each approximately 200 feet in length at the intersection of Redwood Road. These turn lanes service the Main Gate and allow vehicles to queue as they wait to turn into the installation. A traffic signal at the intersection helps control the flow of vehicles. There is additional queuing on Camp Williams for vehicles waiting to enter the installation.

During periods of heavy traffic entering and/or exiting Camp Williams, traffic on SR-68 can become congested and, in some cases create safety hazards with the potential for vehicle accidents. Commuter "rush hour" in the morning and late afternoon can pose the greatest risks for traffic accidents.

The State of Utah is in the process of completing the construction of a new highway called the Mountain View Corridor or SR-85. This six-lane highway will run parallel to SR-68, bisecting Camp Williams to the west, and creates an alternative connection between I-15 in Lehi City and I-80

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in Salt Lake City. Portions of the new highway are complete, however the section adjacent to Camp Williams has not been constructed. The current plan is to initiate construction in early 2024 and complete this phase of work in late 2025.



The completion of the Mountain View Corridor should, in theory, reduce the level of traffic on SR-68. The completion could in turn reduce the congestion and associated safety hazards at the intersection of Redwood Road and the Camp Williams Main Gate. However, the new Mountain View Corridor could create additional traffic issues, with

potential to impact Camp Williams, as a result of new and modified roadway connectors and the associated traffic patterns.

Resiliency (RE)

Resiliency pertains to shifts in global weather patterns and temperatures resulting from natural factors and human activities (e.g., burning fossil fuels) that have long-term impacts on atmospheric conditions. The results of these impacts, such as increased flood potential and wildland fires, can present operational and planning challenges for the military and communities as resources are depleted and environments are altered. Resiliency also references the redundancies an installation has in place to support its infrastructure system in the event of an emergency or disaster.

Key Terms

Climate Adaptation. The process of preparing, planning, and adjusting to the effects of the changing climate.

Changing Environment. Changes in the earth's environment, including the atmosphere, as a result of natural ecological processes and human activities.

Greenhouse Gases. Gases emitted into the atmosphere that trap reflected solar heat.

Radiative Forcing. Changes in the earth's climate that results in atmospheric heating or cooling.

Resilience. Creating conditions or capacity that allow a system and its components to anticipate, absorb, and recover from the effects of a disruptive hazard or threat.

Utility resilience. Creating the conditions or capacity that allows a utility system, such as potable water or electric power, to anticipate, absorb, and recover from the effects of a disruptive hazard or threat.

Utility service vulnerability. A utility system or its associated critical infrastructure is exposed to a threat or hazard such as extreme weather or human activities (e.g. cyberterrorism).

Wildland urban interface. A zone of transition between wilderness and land developed by human activity—an area where a built environment meets or intermingles with a natural environment.

Technical Background

The changing environment occurring across the globe is related to shifts in temperatures and weather patterns. While the exact causes of the changes are not fully understood, it is thought a combination of natural variations and human activities are involved, and it has become clear that a main driver is the increase of carbon emissions from fossil fuel burning. The buildup of greenhouse gases, including carbon dioxide, methane, nitrous oxide, and fluorinated gases causes solar heat to be in the atmosphere instead of being radiated back into space. Changes in the earth's climate that result in cooling or heating of the atmosphere, land, and oceans is referred to as radiative forcing. Positive radiative forcing results when solar heat reflected by the earth's surface is trapped by greenhouse gases and temperatures in the atmosphere increase.

Carbon dioxide emissions are the primary cause of human effects on the changing environment, accounting for nearly 80% of U.S. greenhouse gas emissions in 2020. There are five primary carbon dioxide emissions in the U.S.:

- Transportation activities
- Electric power generation
- Industrial processes
- Residential and commercial activities
- Other non-fossil fuel combustion

The military has identified multiple threats and hazards to military installations as a result of climate conditions caused by the changing environment:

- Temperature extremes
- Precipitation extremes
- Extreme weather including hurricanes, tornados, and other intense storms
- Flooding including riverine, coastal, and flash floods
- Sea level rise
- Land degradation including excessive soil erosion and desertification
- More frequent and intense wildland fires
- Drought conditions
- Increased energy demand

The long-term prognosis indicates that conditions causing the changing environment, such as increasing temperatures and extreme weather patterns, are likely to continue without aggressive measures to reduce greenhouse emission sources and mitigate the associated impacts. Efforts are underway at federal, state, and local levels, including military installations and communities, to identify and implement actions to adapt to the changing environment in an effort to increase resilience and reduce the impacts from the changing environment threats and hazards.

The DoD continues to emphasize and plan for increased utility security for military installations. The DoD's installation energy strategy is designed to ensure mission assurance for the warfighter, reduce energy costs, and improve the energy resilience of our fixed installations. This includes:



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- Reducing the demand for installation energy and water through conservation and efficiency;
- Expanding the supply distributed (on-site) energy for mission assurance;
- Improving the energy grid and storage resilience of our installations;
- Leveraging advanced technology for energy resource efficiencies and increased security; and
- Improving the cybersecurity of mission critical facility related control systems.

The Army, in a similar fashion, has developed a “resilience focus” to ensure installations have adequate power and water supplies to meet mission needs. To reduce mission risk, the Army is prioritizing resilient energy and water supplies, facilities, and infrastructure that support critical missions. Reducing mission risk is achieved through large and small-scale energy and water projects that focus on resilience, efficiency, and affordability:

- Optimize performance, reduce waste, and cut costs associated with energy and water supplies, enhancing operational resilience.
- Prioritize resilient energy and water supplies supporting mission critical facilities and infrastructure.
- Reduce risk for energy and water supplies supporting other missions when it is lifecycle cost effective.

Multiple planning processes and implementation tools have been developed to assist Army installations with improving utility resiliency. The process and tools include:

- Conduct installation energy readiness exercises;
- Prepare installation energy plans;

- Promote sustainable and resilient installation water systems and supplies;
- Strengthen installation resiliency to climate change and extreme weather; and
- Install advanced metering at installations to measure and report energy/water use on an enterprise wide scale.

Finally, the military recognizes that working with local communities is critical to ensuring energy/water resilience for installations. Working with local communities is of particular importance where installations depend on utility services from a public or private entity that is not located on the base. Programs, such as the Defense Community Infrastructure Pilot (DCIP) Program, can assist with addressing community infrastructure deficiencies where those systems support military installations.

RE-1 Increased demand for power and other utility resources due to residential growth around Camp Williams.

Several communities surrounding Camp Williams are among the fastest growing in the State of Utah. Increasing populations and associated development drive the need for additional energy resource supplies and distribution capabilities.

Compatibility Assessment

Camp Williams obtains electricity and natural gas from the same utilities providers that service the region and nearby communities. The region around Camp Williams has been developing at a rapid pace in recent years, and as a result, there is an increased demand for utility resources including electric power and natural gas. Disruptions could potentially occur due to constraints in availability and/or distribution of critical energy resources.

The primary electric service for Camp Williams is provided by Rocky Mountain Power, a regulated utility that is a subsidiary of PacifiCorp. PacifiCorp provides electric power for nearly all of Utah, including the Wasatch Front Service Area where Camp Williams is located. The utility maintains a diverse portfolio for power generation including coal, natural gas, hydroelectric, and renewable energy. In addition, PacifiCorp owns and operates high-voltage transmission lines across the state. The company has identified the need to expand transmission lines in order to meet the projected power needs for Utah. The Energy Gateway Project outlined in PacifiCorp's Integrated Resource Plan proposes to add 2,000 miles of new transmission lines in the western U.S. including Utah.

The electric power service for Camp Williams is provided via aboveground power lines along Highway 68. The electric distribution lines for the cantonment area, east of Highway 68, are underground whereas the portion of the distribution system servicing the installation west of Highway 68 is aboveground.

A 2021 study, the Utah Transmission Study Technical Report, assessed the need for the state's electric power transmission grid to expand and adapt to current and future needs. The study identified key transmission corridors that require upgrades to meet the electric power demand economic growth and development is creating. Over 75% of electric power in Utah is consumed by four counties.

- Salt Lake County
- Utah County
- Davis County
- Weber County

Camp Williams is located in the southern end of this heavy energy use region. The report identified several "pinch points" on the electric grid where there is potential for impacts on transmission lines. One "Tier 1" point is located just south of the City of Provo along the north/south backbone utility corridor that traverses Utah and Salt Lake Counties.

According to the study, Tier 1 constrained areas will require transmission line expansion as new electric power generation resources are brought online.

Economic growth in the state and a recognition that more renewable energy sources are needed for the future is driving plans for the development of additional gigawatts of solar, wind, and associated energy storage projects to meet the expected demand.

Dominion Energy provides natural gas service across much of Utah. The Northern Region includes the pipeline distribution systems in several counties including Utah and Salt Lake Counties. The company has identified multiple projects that are required to meet future flow and pressure demands in their System Capabilities and Constraints Report. Without system upgrades the resiliency of the overall system could be less than desired.

Natural gas for Camp Williams is provided by Dominion Energy. There are limited areas, outside the cantonment area, where propane is used on the installation. The natural gas service for Camp Williams is provided via a connection located south of the cantonment area along Highway 68.



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RE-2 Prolonged drought combined with development raises the potential for wildland fire transfer to the urban interface zone.

The West Traverse Mountain Study Area is located in a semi-arid climate where dry conditions and high summer temperatures coupled with natural fuel loading creates a risk for wildland fires. Wildland fires periodically occur in the region due to both natural and human causes and have the potential to impact both Camp Williams and nearby surrounding jurisdictions.

Compatibility Assessment

The West Traverse Mountain CAS, including Camp Williams, is classified as a semi-arid region with hot dry summers. Summer temperature highs average in the mid to high 80s with periods where temperatures can exceed 90 degrees Fahrenheit. Rainfall is typically less than one-half inch per month and humidity is very low. During the rest of the year (winter, fall, and spring) temperatures range from lows in the 20s to highs in the 60s. Annual precipitation in the Study Area averages between 10 to 20 inches depending on the elevation, with higher elevations receiving greater amounts of rain/snow. Moderate to high winds are not uncommon in the region and can aid in the spread of wildland fires on Camp Williams and in the surrounding areas. The majority of wildland fires on Camp Williams, approximately 60 percent, occur between June and September, when the weather conditions in the region can be ideal for supporting wildland fires.

As climate change continues to affect the weather for most regions, the Study Area is likely to see increased temperatures and more sporadic precipitation events. As a result, the risk of wildland fires is likely to increase in the Study Area.

The Study Area has varied vegetation depending on whether the land has been developed or remains undeveloped. The vegetation within the Camp Williams range areas is shown in Table 5.9

In general, the undeveloped areas of Camp Williams have adequate fuel load for fires to start and spread under the right conditions, and if left unchecked once initiated. Undeveloped areas in the Study Area outside the Camp Williams boundary have similar vegetation habitat as that found at the camp. In some cases, undeveloped areas located outside the camp that have been disturbed but not well managed to prevent invasive species, may have greater wildland fire risks. Topography can also play a role in wildland fires as it can affect habitat for different vegetation types and in some instances impact weather conditions on the ground.

Table 5.9 Camp Williams Vegetation Habitat

Vegetation Habitats	Percent Coverage	Wildland Fire Considerations
Juniper Woodlands	5%	Lower risk for burn, but can create intense fires during major burn events
Gambel Oak Shrubland	36%	Bushy stands have higher risk for burn than tree stands
Sagebrush	23%	Risk for burn varies from moderate to high depending on understory
Bunchgrass Grasslands	26%	Lower risk for intense burns
Invasive Grasslands	5%	Highly flammable can enable wildfire spread

Source: Camp Williams 2021 INRMP; 2022 and 2011 Integrated Wildland Fire Management Plans.

Wildland fires can be the result of human activities as well as natural occurrences. At Camp Williams, as outlined in the 2022 Integrated Wildland Fire Management Plan (IWFMP) and the 2021 INRMP, range training activities have caused the majority of wildland fires on the camp. The camp averages approximately seven “wildfires ignitions” per year. Of wildland fires on the range, the majority are caused by activities on the machine gun range and the artillery range. Nearly 90% percent of the wildland fires on Camp Williams are relatively small, burning less than 100 acres. Since 1980 there have been six major wildland fires at Camp Williams of greater than 1,000 acres in size, a few of which burned areas beyond the camp boundaries including the “Pinyon Fire” which burned nearly 6,000 acres including over 500 acres of private land outside the camp boundary. The largest wildland fire documented on Camp Williams was in 2001 when approximately 8,500 acres burned during the “Big Fire.” In 2010, the “Machine Gun Fire” burned more than 4,000 acres including land and several homes in The Cove at Herriman Springs. This fire was caused by live fire training on the range and was exacerbated by dry conditions and high winds. In addition to military training caused wildland fires, other human activities, lightning, and unknown causes are the primary initiators of wildland fires on the camp. The camp also conducts periodic prescribed burns for habitat management which is required to conserve areas needed for specific training operations and environmental considerations.

Communities within the Study Area are also impacted by wildland fires. In 2019 the City of Bluffdale was the site of 200 acre wildland fire in an undeveloped area near Camp Williams. In July 2021, Herriman City had a small wildland fire, caused by construction activities, which required the evacuation of 30 homes. In 2020 the City of Saratoga Springs suffered impacts from the Knolls wildland fire that exceeded 10,000 acres and destroyed/damaged residences. Also in 2020, Lehi City was impacted by the Traverse Mountain Fire that burned around 500 acres and required the evacuation of over 40 homes. The Eagle Mountain City “Soldier” wildland fire burned nearly 400 acres in 2020.

As the communities around Camp Williams grow and new development occurs there is an increased risk to lives and property from wildland fires. Development that encroaches on the camp boundaries, referred to as the wildland urban interface, is at a higher risk of wildland fires that can spread off the camp and into the community. In the past these fires would only burn undeveloped land; now there is potential for impacts to urban areas where land use is intensifying over time. Communities such as the cities of Herriman to the north, Bluffdale to the northeast, Eagle Mountain and Cedar Fort to the south and Saratoga Springs to the southeast all continue to grow and expand developed areas and, in many cases, the urban/suburban areas get closer to Camp Williams.

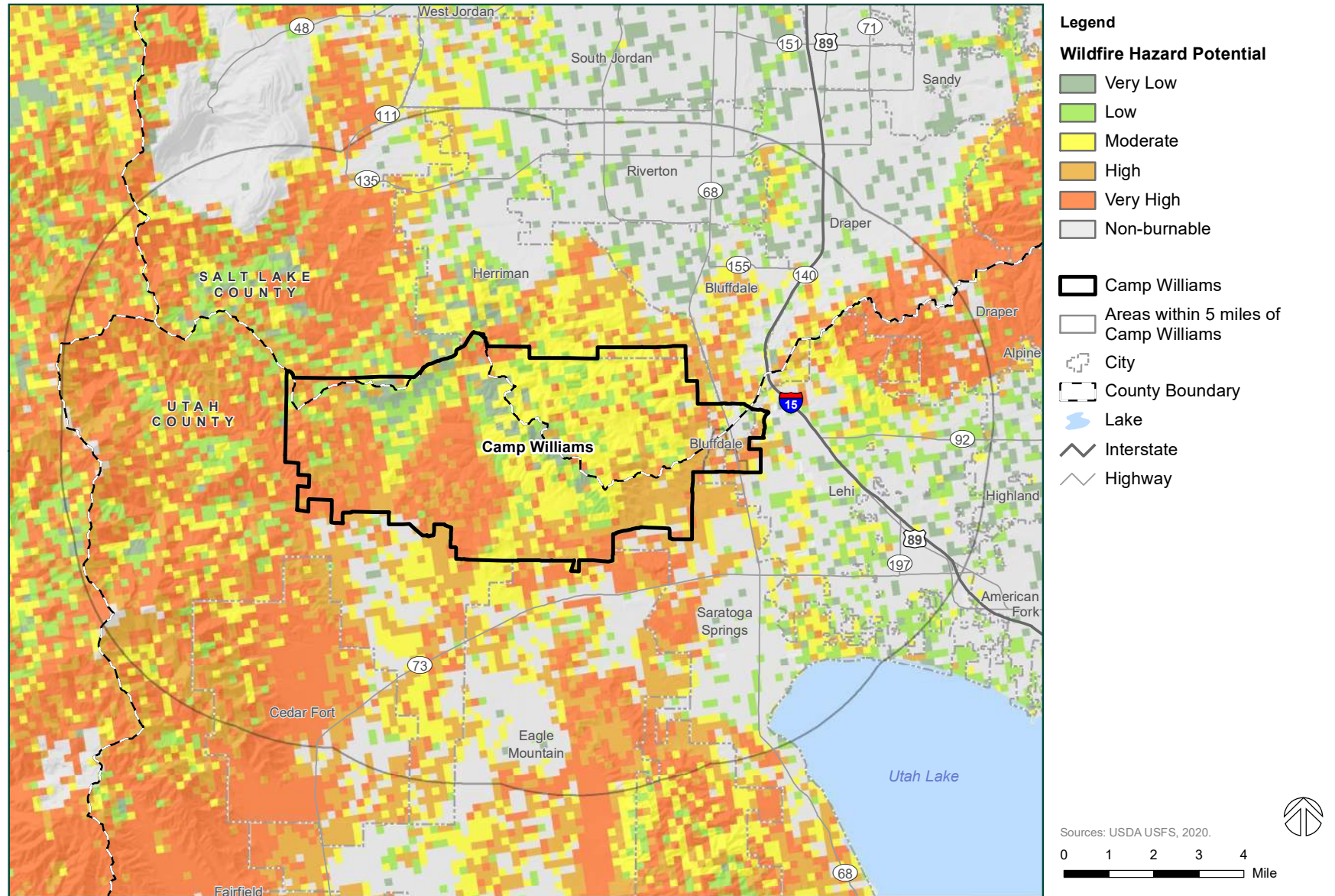
Figure 5.12 is a map that depicts the wildland fire hazard potential across the Study Area. Figures 5.13 and 5.14 depict wildland fire hazards in the northeast and southeast areas respectively near the Camp Williams boundary. As can be seen, much of the installation and portions of the surrounding communities are in the moderate to very high-risk areas. As would be expected, highly developed areas tend to be at a reduced risk of wildland fires occurring but may be at an increased risk of wildland fire impacts from adjacent undeveloped areas. This increased risk includes the potential for wildland fires to transition to urban fires when they spread across large areas.

Camp Williams aggressively manages wildland fires across the installation. As mentioned, the Camp has a 2022 IWFMP that addresses all aspects of wildland fire management, including the following:

- Organization and responsibilities
- Interagency cooperation
- Risk assessment
- Fuel factors
- Monitoring requirements
- Policies, goals, and objectives.



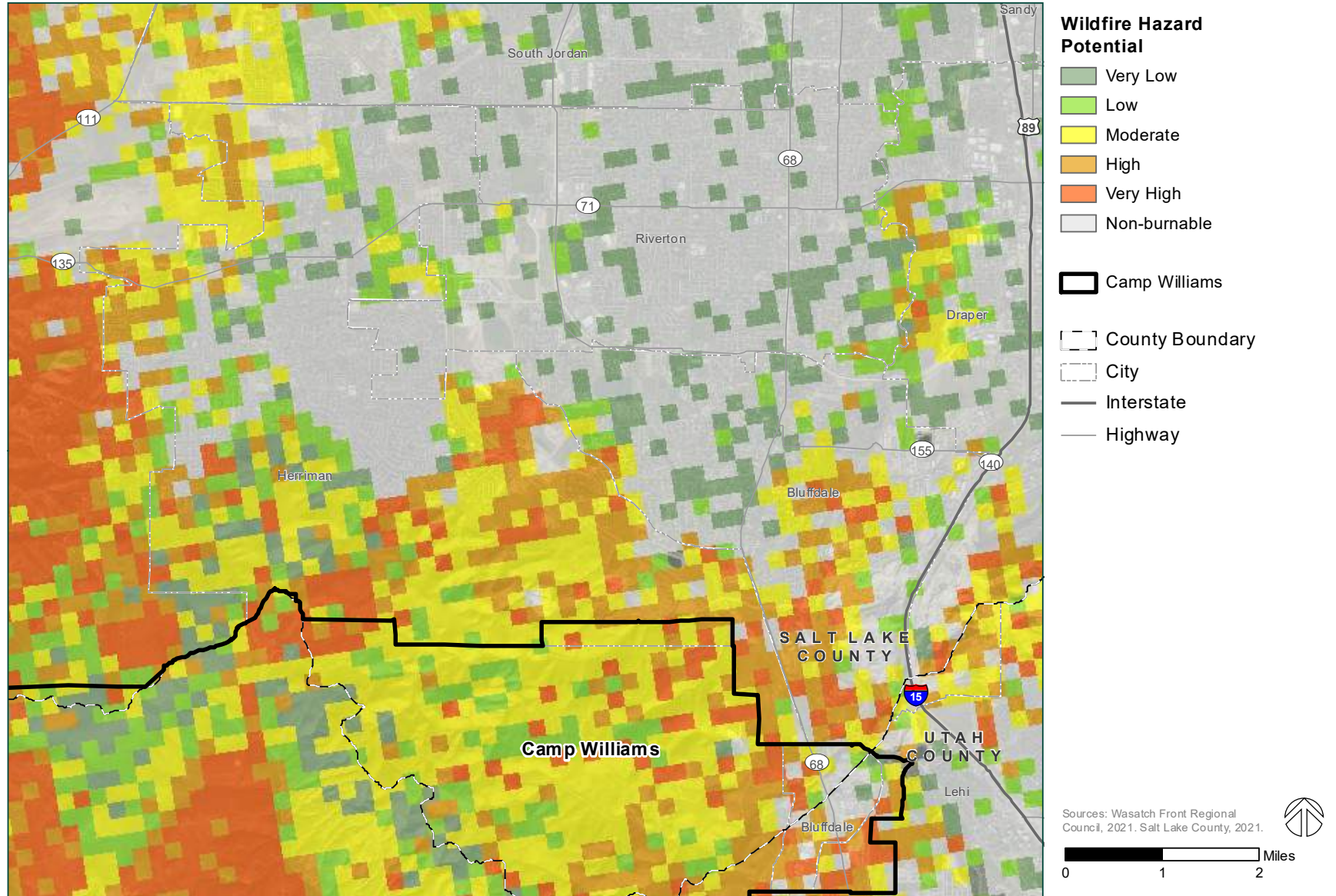
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Matrix

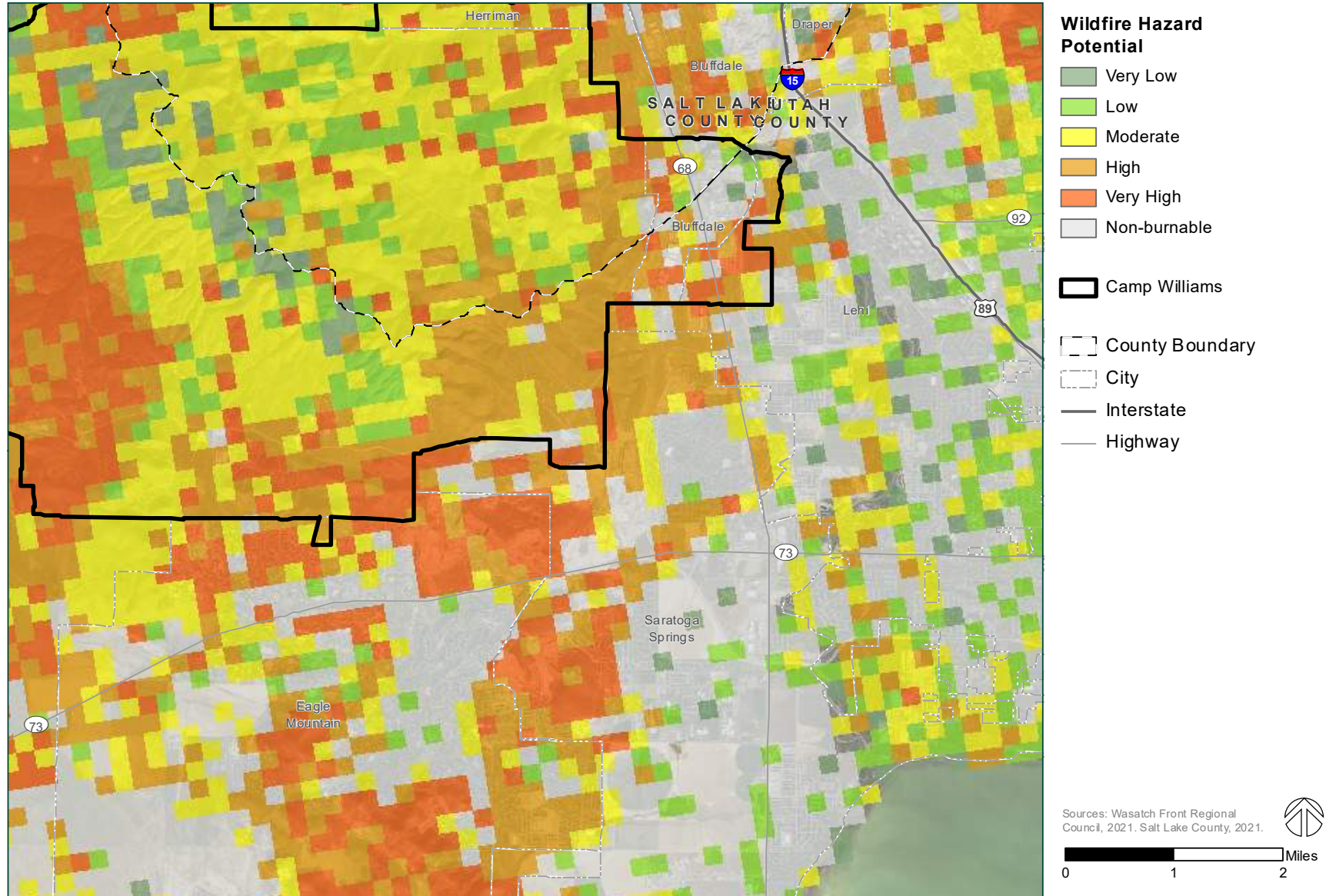
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Compatibility Findings Assessments



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West Traverse Mountain Compatibility Area Study



The management of wildland fires at Camp Williams includes the use of prescribed burns to help reduce fuel loading and enhance native vegetation habitat which can also help reduce the intensity of range fires. According to the 2022 IWFMP, the installation manages a robust prescribed burn program as part of the overall fire management protocol. The Camp Williams Wildland Fire Working Group develops an annual prescribed burn plan that lays out the planned burn actions and the required specific pre-treatment steps. The installation has developed a phased approach to conducting prescribed burns on the range, which helps control the burns while achieving the desired results. The IWFMP highlights the benefits associated with prescribed burns and outlines the necessary control and mitigation measures required for wildland fire controlled burns at Camp Williams.

Other techniques employed at Camp Williams as part of the wildland fire program are the use of fire breaks and fuel breaks. Fire breaks involve the removal of all vegetation along a continuous line, typically with a bulldozer or similar earth moving equipment. The upside of fire breaks is the ability to help manage the spread of certain types of fires, but the downside includes soil erosion and introduction of non-native plant species thereby increasing risk of higher intensity fires. Fuel breaks involve thinning vegetation to reduce the fuel load without exposing/grading the soil. Methods for creating fuel breaks include using goats or sheep to graze on the vegetation, application of herbicides in specific locations, and greenstripping where undesirable plants are removed and replaced with vegetation that is more resistant to fires and/or intense burning.

Camp Williams has 20,979 acres of range training area and multiple weapons ranges including live fire ranges. Water resources available for firefighting are limited primarily to the cantonment area and a small built area at Tickville Gulch. Water used to fight wildland fires must be transported into the range locations, in some cases via helicopters. Camp Williams personnel have discussed expanding water resources into range training areas and use of water “dip tanks/ponds” as

potential approaches to enhance wildland fire fighting at Camp Williams.

Camp Williams has significant resources dedicated to wildland fire management. The Wildland Fire Program Manager and Range Control Officer are UTARNG personnel responsible for overall management and enforcement of the wildland fire program. In addition, the Wildland Fire Working Group provides work plan support. The Unified Fire Authority (UFA) has been contracted by the UTARNG to provide a full range of wildfire services for the camp. Targeted support includes the following:

- Wildfire personnel staffing
- Staff training
- Firefighting equipment requirements
- Suppressing wildland fires
- Planning/implementing mitigation techniques
- Coordinating with Camp Williams organizations/POCs
- Local mutual agreements for wildland fire support

The 2022 IWFMP was recently updated to reflect current operations, including the use of the UFA for wildland fire support on Camp Williams. In addition, the U.S. Army has a robust Wildland Fire Management Program supported by DoD Instruction 6055.06, AR 420-1, AR 200-1, and additional policies/memorandums. Camp Williams has mutual aid agreements with federal and state agencies and the Utah Department of Natural Resources Forestry Division. The UFA maintains mutual aid agreements with other local communities and agencies in the region. Camp Williams also coordinates with the Utah Division of Air Quality as part of its wildland fire notification procedures.



















As noted in the 2022 IWFMP, communication with the general public and outreach to other key local agencies is an important planning requirement as part of prescribed burn activities. It is also important to keep the public informed during real world wildland fires on Camp

West Traverse Mountain Compatibility Area Study

Williams. The 2022 IWFMP does not clearly identify responsibilities to ensure the public is aware of wildland fires on the installation, especially wildland fires that have the potential to move off Camp Williams into the communities.

Local communities have varying wildland fire planning and implementation policies and guidance. Table 5.10 provides a summary of jurisdiction tools.

Table 5.10 Jurisdiction Wildland Fire Plan/Tools

Jurisdiction	General Plan Goal Objectives	Emergency Operations Plan/Hazard Assessment	Wildland/Urban Map
City of Bluffdale			
Eagle Mountain City			
Herriman City			
City of Lehi			
City of Saratoga Springs			
Town of Cedar Fort			

Source: Matrix 2021



Addresses wildland fires



Does not address wildland fires adequately



Tool not available

The City of Bluffdale has a 2020 Emergency Operations Plan (EOP) that addresses urban fire incidents and briefly discusses wildland urban interface fires. The level of detail may be inadequate relative to the potential risk associated with such events. The City of Bluffdale General Plan does not address wildland fires.

Eagle Mountain City has a 2008 EOP that mentions wildland fire in the context of fire and rescue responsibilities. The 2018 Eagle Mountain City General Plan does not address development concerns related to wildland fires.

The Herriman City General Plan does not address development concerns related to wildland fires.

The Lehi City Hazard Vulnerability Assessment discusses concerns with the wildland urban interface and potential issues with fire threats. The Lehi City General Plan does not address wildland fires.

The City of Saratoga Springs has developed a city-defined wildland urban interface area and adopted a map that depicts the area in 2013. The 2017 Saratoga Springs General Plan includes an objective to maintain a defensible space for the wildland urban interface for the specific purpose of wildland fire management.

The Town of Cedar Fort General Plan does not address Camp Williams or development concerns related to wildland fires.

As development continues in the Study Area, it is critical that the wildland urban interface areas be managed to help ensure wildland fire impacts to communities are minimized. Land use planning and wildland fire management tools such as general plans, emergency management plans and local ordinances, need to incorporate wildland urban interface goals and objectives to help reduce the threat to populated communities.

Safety (SA)

Safety zones are areas in which development should be more restrictive, regarding use and concentrations of people, due to the higher risks to public safety. Military installations often engage in activities or contain facilities that, due to public safety concerns, require special consideration by local jurisdictions when evaluating compatibility. It is important to regulate land use near military installations, airfields and operational ranges to minimize risk from potential aircraft mishaps, reduce air navigation hazards, and reduce impacts from range training operations. To help mitigate potential issues, the DoD has delineated Clear Zones (CZ) and Accident Potential Zones (APZs) in the vicinity of airfield runways, weapons firing range safety zones, and explosive safety zones around live fire ranges, impact areas, and munitions storage locations.

Key Terms

Wildland urban interface (WUI). A zone between where the developed built environment (communities, facilities, infrastructure) meets the undeveloped natural environment.

SA-1 Wildland fires on Camp Williams can cause mission impacts.

The ongoing drought, increasing fire season length, and other weather-related hazards have increased the potential for more frequent and greater severity wildland fires on Camp Williams. This increased potential for wildland fires can have a major impact on training operations including delays, disruptions, and postponement of critical training activities that support national security and defense support operations.

Compatibility Assessment

The environment and climate where Camp Williams is located is semi-arid with hot dry summers and minimal precipitation. Even during the wet season rainfall levels are moderate. The direct effects of climate change are becoming more evident at Camp Williams. The UTARNG and installation garrison staff report various threats and hazards associated with the changing climate including greater frequency and severity of wildland fires. The fire season in Utah has traditionally been between June and September of each year. While this is still the timeframe for the greatest risk of wildland fires, environmental conditions have changed and continue to change where the fire season is now extended from April to November.



Wildland fire on the range at Camp Williams, UTARNG, 2012

In addition to the obvious health, safety, and environmental impacts from wildland fires, the military mission at Camp Williams is

compromised as well. The DoD has identified wildland fires, particularly in the western U.S. as a major risk to installation activities, assets, and capabilities required to successfully conduct military missions and carry out training operations. The following four military lines of effort are particularly vulnerable to climate change and as a result subject to potential risks from wildland fires:

Plans and operations are the various activities needed to prepare for and conduct the full range of military operations.

Training and testing are necessary to maintain capabilities with ready access to air, land, sea, and outer space that provide environmental settings similar to the expected operational conditions.

Built and natural infrastructure are required for military readiness and preparedness for successful operational execution. This infrastructure is typically provided by military installations and their associated mission footprint located off the installation. The footprint includes airspace for aviation training, land buffer areas for range activities, safety zones, and other similar resources located around military installations that are potentially impacted by testing and training.

Acquisition and supply chain develops, acquires, fields, and sustains the necessary weapons systems, support equipment, and associated services to ensure the DoD has the capabilities to meet current and future requirements.

Military plans, operations, training, and readiness at Camp Williams are affected by wildland fire events. Camp Williams loses approximately 15 range training days due to extreme heat and wildland fire hazards annually. These 15 days of lost training equate to a much higher number of “Soldier training days” as multiple military members are affected for each single day of training lost on the range. Wildland fire risks on the Camp Williams range areas curtails certain training activities during high fire season, which now extends from April through late October and often early November. Live fire artillery training and the use of tracer rounds increase the potential for igniting fires and cannot be

accomplished when fire risks are high. Similarly, during extreme heat events, personnel safety dictates limits on range training operations. There is limited range training during National Weather Service “red flag days” or extreme heat warnings.


Facilities and infrastructure at Camp Williams periodically lose electrical power service provided by Rocky Mountain Power. Power interruptions impact military operations across the installation including classroom training unless the facility is equipped with emergency generator backup. These disruptions of electrical service are caused, in some cases, by wildland fires and impacts to transmission lines.

Land degradation is a concern at Camp Williams including in the range locations that have burned from wildland fires. When the burned areas are then hit by extreme storms and precipitation, the result is often storm debris and extreme soil erosion. Stormwater flows and associated debris/excessive sediment can constrain certain training activities on Camp Williams.

Figure 5.15 summarizes the wildland fire impacts and the potentially vulnerable mission related tasks.

Camp Williams and the UTARNG continue to dedicate resources to adapt to the changing environment and the resulting increase in frequency and severity of wildland fires. By doing so the installation has been able to mitigate, but not prevent, the wildland fire impacts to the mission. It is likely that more adaptive planning and resiliency initiatives will be required to ensure Camp Williams can meet its mission objectives in the future.

Figure 5.15 Mission Vulnerabilities from Wildland Fires

DoD Climate Change Threat/Hazard Category:		Wildland Fires
Army Resiliency Categories		
Operations, Training, Testing & Readiness		Vulnerabilities
Training range access & availability		Yes
Available training days		Yes
Impact on & risk to soldiers		Yes
Frequency spectrum impediments		Yes
Health and safety risks to Army personnel & families		Yes
Emergency preparedness/management plans		Yes
Continuity of operations plans		Yes
Wildland fire and wildfire plans		Yes
Mutual aid		Yes
Facilities & Infrastructure (Built & Natural)		Vulnerabilities
Energy demand		No
Energy availability & delivery		Yes
Power grid		Yes
Roadways & trails		Yes
Water infrastructure		No
Water availability		Yes
Number of 50-year floods		No
Flooding of facilities		No
Flooding of training areas		No
Real property master plan		No
Installation energy & water plan		Yes
Building stability		No
Environment, Environmental Compliance & Conservation		Vulnerabilities
Impact on land-carrying capacity to support testing & training		Yes
Air quality		Yes
Soil erosion		Yes
Water quality		Yes
Impact on environment		Yes
Impact on environment compliance		Yes
Vegetation stress		Yes
Impact on quality of life		Yes
INRMP		Yes
Impact critical habitat		Yes
Acquisition and Supply Chain		Vulnerabilities
Interrupted shipment/delivery or storage/stockpile of materials, equipment and supplies		Yes

Source: Matrix, 2022.



SA-2 Wildland fires pose greater risk to WTM communities.

Communities located in the WTM region are under greater threat from wildland fires. This is especially true for those areas located in the WUI areas near Camp Williams. Areas that are close to the Camp Williams boundary may be at higher risk from the potential for wildland fires moving from undeveloped areas of the installation into the built residential communities via the WUI.

Compatibility Assessment

The region around Camp Williams is classified as a semi-arid region with hot dry summers. Summer temperature highs average in the mid to high 80s, with periods where temperatures can rise to 100 degrees Fahrenheit (F). Rainfall is typically less than one-half inch per month and humidity is very low. During the rest of the year (winter, fall, and spring) temperatures range from lows in the 20s to highs in the 60s. Historically the majority of wildland fires in the WTM region, approximately 60 percent, occur between June and September, when the weather conditions in the region can be ideal for supporting wildland fires. However, as a result of changing environmental conditions, the wildland fire season can now run from April to November. The climate projections by NOAA indicate the potential for higher temperatures and lower precipitation levels across Utah. If the projections prove to be correct, wildland fire impacts to Camp Williams and the surrounding communities will only increase absent the implementation of appropriate adaptation measures.

Much of the region around camp Williams and the surrounding communities remains undeveloped, although this continues to change as economic growth drives more development. Communities that have expanded into previously undeveloped areas either adjacent to the Camp Williams boundary or in other directions, are typically bordered by large areas of natural habitat. These natural conditions across the region include areas of desert with vegetation such as grasses,

sagebrush, shrubs, and some juniper/pinyon pines. Forested areas are primarily mountain shrub, oak, maple, and some conifer trees. There is varied topography with steep slopes surrounding much of the developed areas. These conditions, along with the climate discussed in the previous paragraph, make wildland fires a major threat to Camp Williams and the surrounding communities. The land space where urban/suburban development transitions to natural undeveloped areas is referred to as the WUI. Wildland fire risk and associated vulnerabilities to humans, facilities, and equipment can be significantly higher in WUI areas. When wildland fires transition across the WUI into more developed areas there is a potential for devastating impacts.

The WUI areas are locations where creating defensible spaces is a priority to prevent wildland fires from spreading from undeveloped areas into communities and similar developed locations. Defensible space initiatives include the following:

- Management of vegetation to minimize the risk of fire, such as landscaping with fire resistant plants and clearing dead vegetation around buildings
- The use of fire-resistant hardscape materials, such as stone, for landscaping around buildings
- Careful placement of propane tanks and/or elimination of other flammable materials around buildings
- Use of fire-resistant materials in home and outbuilding construction

Figure 5.16 is a map that shows the WUI areas in the Study Area.

The Camp Williams IWFMP discusses the WUI in general terms, stating that there are few locations and facilities on the installation where the WUI is a concern. The one exception may be the Utah Data Center located south of the cantonment area. The IWFMP does identify concerns with wildland fires moving from the range into communities

Compatibility Findings Assessments

that have developed near the installation boundary. Areas of concern include the following:

- Residential areas in southern Herriman
- Cedar Pass in Eagle Mountain City
- Meadow Ranch in Eagle Mountain City

The Camp Williams IWFMP lays out plans and actions to aggressively prevent wildland fires that start on the installation from spreading beyond the boundary. History has shown it is not always possible to prevent wildland fires from moving off the installation. The Camp Williams risk assessment indicates that the area where fires are most likely to cross the boundary is along the southwestern portion of the installation; however, this does not mean other areas are without risk. Five major fires have moved off the installation:

- 2001 Big Fire (northern boundary)
- 2001 Redwood Road Fire (northern boundary)
- 2010 Machine Gun Fire (northern boundary)
- 2016 Juniper Ridge Fire (southern boundary)
- 2016 Pinion Fire (southern boundary)



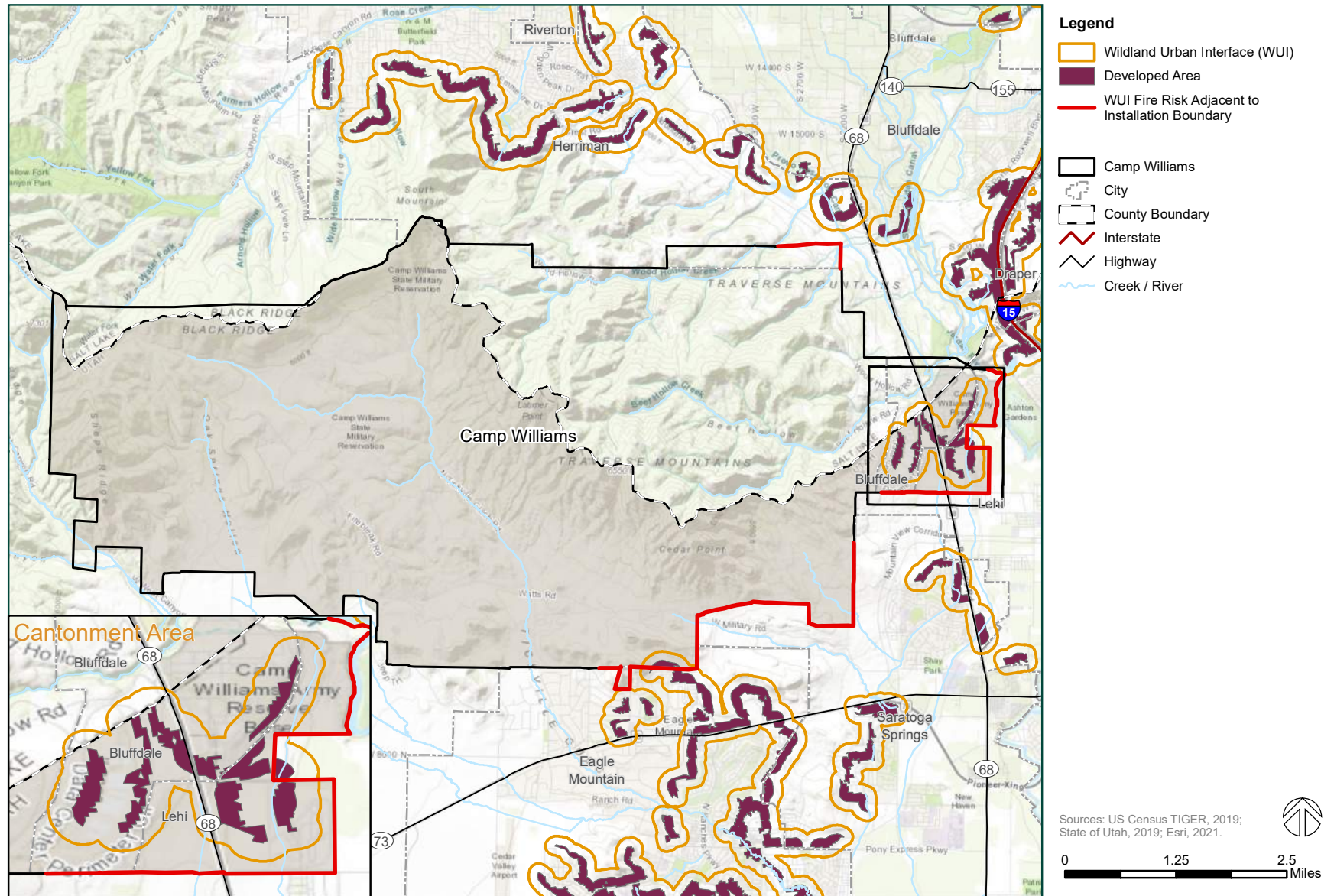
Machine Gun Fire near Herriman City, Desert News, 2010.

To help reduce risks associated with wildland fires across the state, Utah has developed a Utah-specific WUI Code that leverages the International WUI Code. The communities in the Study Area have all implemented some level of planning related to wildland fire management.

- Cedar Fort has an agreement with the Utah Division of Forestry, Fire and State Lands for wildland fire support protection. The agreement does mention the importance of WUI areas.
- Bluffdale maintains a mutual aid agreement with the UFA.
- Saratoga Springs maintains a WUI Map that identifies risk areas.
- Eagle Mountain City is serviced by the UFA for wildland fire management including WUI planning.



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- Herriman City is serviced by the UFA for wildland fire management, including WUI planning.
- The Salt Lake County Wildfire Preparedness Plan addresses WUI directly and includes a significant discussion on the planning requirements and appropriate actions to minimize the associated risks.
- The Utah County Wildfire Protection Plan addresses WUI directly and includes a significant discussion on the planning requirements and appropriate actions to minimize the associated risks.

The UFA of Greater Salt Lake provides fire protection for unincorporated areas in much of the region and Camp Williams and partners with other locations as well. The UFA provides Camp Williams and surrounding communities with the following wildland fire management services:

- Wildland fire attack and suppression
- Wildland fire mitigation and consultations
- Wildland fire educational outreach
- Community Wildfire Preparedness Plans
- Wildland fire training for National Guard personnel

The UFA provides capabilities across their area of responsibility to ensure efficient and effective application of resources. This wildland fire management partnership is critical to the WTM region wildland fire resiliency.

Resiliency planning among military installations, local communities, agencies, and other stakeholders should occur to protect the long-term viability of military missions and the surrounding communities that support the installation. Wildland fire management and planning is a significant resiliency factor in the WTM Study Area. Recognizing the symbiotic relationship that should exist between installations and adjacent communities, the Office of Local Defense Community Cooperation implemented the Installation Resiliency Authority in an

effort to mitigate existing and future conflicts and enhance communication and coordination among all affected stakeholders. The program enables states and local governments to help installations sustain and optimize their mission, while enhancing the long-term readiness and military value of the power projection platform.

Wildland fire management and planning on a regional scale has been shown to be successful in many locations where it has been implemented. The Greater Salt Lake UFA is one example of regional wildland fire capability that can reduce risks associated with the WUI.

SA-3 Military traffic on public highways creates impacts.

Military units travel between Camp Williams and Dugway Proving Ground (DPG) on high-traffic civilian roadways, such as SR-73, which can increase congestion and present safety risks.

Compatibility Assessment

Military units training at Camp Williams periodically need to travel to and from the U.S. Army Testing Site, DPG in southern Tooele County. The DPG offers important training facilities that complement the facilities at Camp Williams. For example, the terrain at DPG allows for greater maneuverability during artillery firing training. Also, the ceiling of the Restricted Airspace (RA) over DPG is higher than Camp Williams', which allows military personnel to train with a wider array of munitions. DPG's RA also allows military personnel to train in the unmanned aerial vehicles (UAVs), which are currently not authorized at Camp Williams. Camp Williams is currently working on obtaining authorization to fly small (under 20 lbs.) UAVs such as the Raven. DPG also serves as an alternative training site when the fire risks at Camp Williams are high and live-fire training is prohibited.

The established route for military convoys traveling to DPG from Camp Williams is south along SR-68 (Redwood Rd.) to SR-73, through Eagle

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Mountain, Cedar Fort, and Fairfield, to SR-199 through Rush Valley and Terra. This route is approximately 100 miles along state highways that are not fully improved. The impacted portion of this route within the Study Area is SR-73 through Eagle Mountain and Cedar Fort, which is classified by the UDOT as an Urban Minor Arterial and an Other Principal Arterial. Currently, SR-73 is the main roadway through Eagle Mountain and is limited to two or four lanes at different mile markers along the route. The roadway is at capacity and military traffic adds to existing traffic levels and congestion. State Route 73 through Cedar Fort is a relatively rural two-lane roadway and has residences, business and other community activities along the route.

The Mountainland Association of Governments 2019-2050 Regional Transportation Plan identifies SR-73 between Lehi and the Cedar Valley as a choke point for traffic as future growth continues. There are plans to make SR-73 a freeway by 2040 that include widening the roadway. The UDOT completed a SR-73 Corridor Planning Study in 2016 that laid out the concepts for widening the roadway to meet anticipated traffic needs.

Military traffic along the route can increase congestion, particularly if it occurs during heavier usage periods such as morning or evening commutes. This can also increase the risk of traffic incidents/accidents involving military and civilian vehicles. The additional military traffic can also add to the roadway deterioration over a period of time. It is important for the military to coordinate with the local jurisdictions and other highway agencies in advance of periods of heavy roadway use by Camp Williams.



Portion of SR-73 near Cedar Fort, Google Maps, 2022.

Water Quality/Quantity (WQQ)

Water quality/quantity concerns include assurance that adequate water supplies of good quality are available in sufficient quantity for use by military installations without compromising the needs of surrounding communities. Water supply for agriculture and industrial use is also considered.

Key Terms

Acre-foot. An acre-foot is the volume of one acre of surface area to a depth of one foot. It is equal to approximately 325,851 gallons or approximately enough water for a family of four for one year.

Aquifer. An aquifer consists of a layer of porous substrate that contains and transmits groundwater where water can flow directly between the surface and the saturated zone.

Groundwater. Groundwater is water that is held underground in the soil or in pores and crevices in rock.

Public-supply water use. Public-supply water use is water withdrawn by public and private water suppliers that furnish water to groups of users. Public suppliers provide water for a variety of uses, such as domestic, commercial, industrial, thermoelectric power, and public water use.

Reclaimed/Recycled wastewater. Reclaimed/Recycled wastewater is water such as treated wastewater plant effluent that has been diverted for current/future beneficial uses such as groundwater injection, irrigation, industry, or similar purposes.

Surface water. Surface water is derived from waters that flow continuously over land surfaces in a defined channel or bed, such as streams and rivers; standing water in basins such as lakes, wetlands, marshes, swamps, ponds, sinkholes, impoundments, and reservoirs either natural or man-made; and all waters flowing over the land as runoff, or as runoff confined to channels with intermittent flow.

Water year. The period from October 1 to September 30 of the following year.

Technical Background

At the federal level, the U.S. EPA is responsible for the oversight of public water systems and enforcement of the Safe Drinking Water Act of 1974. The EPA has delegated primary enforcement responsibility for public water systems in California to the state. The Bureau of Reclamation, an agency within the U.S. Department of Interior, manages, develops, and protects water resources so they can ultimately be used for the benefit of the public to include raw water supplies. Region 7 of the Bureau of Reclamation covers the Upper Colorado Basin including the State of Utah where the Study Area is located. Other federal land management agencies are involved in helping to protect watersheds across the country including in the State of Utah.

At the state level there are several agencies involved in the oversight of water quality and quantity.

- The Utah Division of Water Resources, within the Utah Department of Natural Resources, is responsible for planning, conserving, developing and protecting state water supplies.
- The Utah Division of Water Quality, under the direction of the Utah Water Quality Board, develops policy and regulations related to ensuring water quality and safety standards. The Division also is responsible for wastewater and stormwater compliance.
- The Utah Division of Drinking Water, under the direction of the Utah Drinking Water Board, develops and enforces regulations for public drinking water systems in the state.
- The Utah Division of Water Rights administers the appropriation and distribution of state water resources.

The Salt Lake County Health Department Water Quality Bureau regulates drinking water systems. The County also manages the Watershed Planning and Restoration Program designed to integrate the County's efforts to restore and protect water sources. The Utah County Division of Environmental Health regulates drinking water systems in the county.

The State of Utah has three primary sources to supply water for the needs of the state.

- Surface water
- Spring water
- Groundwater

The state makes determinations regarding how much water is available along with constraints that may affect the availability of water for each supply source. The information is used to determine how current/future water needs can be met. The uses of water in the state include residential, commercial, institutional, industrial, and agriculture. As the state continues to grow the demand on the water supply is expected to



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continue to increase. Agriculture consumes the largest amount of water in the state.

The West Traverse Mountain CAS Study Area, including Camp Williams, is classified as a semi-arid region with hot dry summers. Summer temperatures high average in the mid to high 80s with periods where temperatures can exceed 90 degrees Fahrenheit. Rainfall is typically less than one-half inch per month and humidity is very low. During the rest of the year (winter, fall, and spring) temperatures range from lows in the 20s to highs in the 60s. Annual precipitation in the Study Area averages between 10 to 20 inches depending on the elevation, with higher elevations receiving greater amounts of rain/snow. As climate change continues to affect the weather for most regions, the Study Area is likely to see increased temperatures and more sporadic precipitation events.

The State of Utah, like much of the western U.S., is in the midst of an ongoing drought that has significantly impacted water supplies. As of the beginning of the current water year (October 1, 2021), the state storage of water supplies was below 50% of storage capacity. The Utah Jordan River Basin, where the CAS Study Area is located, is at 49% capacity, well below levels last year and for an average year. Both Utah County and Salt County are currently in extreme drought conditions according to data from the National Integrated Drought Information System.

WQQ-1 Limited water availability down-range at Camp Williams has the potential to impact training operations.

Potable water system distribution at Camp Williams is limited to the cantonment area. The Range Maintenance Facility and other down-range portions of the installation currently rely on a separate water connection.

Compatibility Assessment

The Camp Williams cantonment area is supplied with potable water from a series of natural springs and groundwater wells. Water at Camp

Williams is used for drinking/sanitation, fire suppression, and agriculture/irrigation purposes. Most of the irrigation water needs are provided from the Welby Jacoby Canal.

The following two groundwater production wells and two springs are located on Camp Williams.

- Well #3 is located just east of the cantonment area.
- Well #2 is located west of the cantonment area within the Traverse Mountains.
- The Hidden Valley Springs are located in proximity to the Jordan River.
- The Beef Hollow Spring is just to the west of the cantonment area

The installation potable water infrastructure includes approximately 14 miles of distribution lines, storage tanks, pumps and a treatment facility. The Range Maintenance Facility located at Tickville Gulch is connected to the City of Eagle Mountain water supply system. This water connection consists of a distribution pipe and is separate from the Camp Williams potable water system.

For water needs on the training range, portable water tanks are typically filled at the Range Facility using the connection from the City of Eagle Mountain water system. Camp Williams has expressed an interest to provide water to the Range Maintenance Facility and down-range areas using installation resources to better meet current/future mission needs and enhance installation resiliency. The dependence on the City of Eagle Mountain water system poses a risk to operational continuity if the water system service were interrupted.

It may be possible to minimize the risk to operational continuity by providing new water storage tank capacity at the site while continuing to maintain the water connection to the City of Eagle Mountain. Another option may be to eliminate the City of Eagle Mountain water connection and truck water to the Range site from existing water supply sources on Camp Williams. This alternative may not be well suited to the needs of

Compatibility Findings Assessments

the installation due to the logistics and resources involved. Another consideration could be to develop a new groundwater well near the range site along with the required distribution, treatment, and storage infrastructure to provide water for the range site and other down-range needs.

WQQ-2	Increased development in the vicinity of Camp Williams is causing concerns regarding the resiliency of water supply sources.
Camp Williams obtains its water supply from springs, surface waters, and groundwater sources. As development continues to grow around the installation, particularly to the north and east, impacts to the water supply sources have the potential to degrade the quality and reduce the available quantity of water for Camp Williams.	

Compatibility Assessment

Camp Williams water needs are supported by surface water, spring water, and groundwater supplies. Table 5.11 provides a summary of water sources and usage for 2020. In addition, the installation reported approximately 76.7 acre-feet of water from the Welby Jacob Canal used for irrigation. From 2012 through 2019, Camp Williams reported water usage has ranged from a low of 266.05 acre-feet in 2015, to a high of 431.98 acre-feet in 2018. The 2020 Camp Williams water usage report also indicates an estimated water loss of approximately 17% due to system inefficiencies, leakage, and other factors.

One key source of water supply for Camp Williams is located off the installation to the north near the City of Bluffdale. The Hidden Valley Springs are a series of springs where collection boxes are used to capture water from the springs. The collected water is then sent to the installation via a pump station and piping to the installation for treatment, storage, and distribution.

Table 5.11 Camp Williams Water Usage for 2020

Water Source	Primary Use	Annual Usage in Acre-Feet
Beef Hollow Springs	Potable water	36.1
Camp Well Groundwater #2	Potable water	88.8
Camp Groundwater Well #3	Potable water	46.5
Hidden Valley Springs	Potable water	221.4
Oak Spring Stream	Agriculture	11.2
Tickville Springs	Agriculture	19.6
Purchased from City of Eagle Mountain	Potable water	9.5
Totals		433.1

Source: Utah Division of Water Rights, Water Records, 2020.

Water springs are typically sourced from groundwater that naturally flows to the surface. Any activities that can cause pollution or contaminated runoff in the vicinity of the spring areas is a cause for concern. Surface runoff from development contaminated with silt and other pollutants can affect the quality of the spring water. Agricultural runoff that contains animal waste or residue from crop management can also impact the quality of the water supply. Similarly, any other activities, such as illegal dumping, that can contaminate the groundwater source of the springs are problematic.

Because the Hidden Valley Springs are located outside the installation boundary, Camp Williams does not control the land use in the immediate area. As community development expands southward toward Camp Williams the potential for impacts to the spring water sources



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increases. The Hidden Valley area in the City of Bluffdale is within one-half mile of the water pumping facility used by Camp Williams. Immediately to the east of the pumping facility is a borrow facility, gravel/asphalt plant, and concrete operations. In 2015 the Environmental Protection Agency investigated illegal dumping of waste products that posed a hazard to the Jordan River and the springs in the area.

The State of Utah and affected counties are responsible for the protection of drinking water supply sources. The Utah Department of Environmental Quality Division of Drinking Water implements R309-600 Source Protection for Ground-Water Sources and 309-605 Source Protection for Surface Water Sources. For public water systems, the regulations require source protection plans include specific variables:

- Delineation of protection zones
- Identification/inventory of potential contamination sources
- Actions to minimize risk of contamination
- Land use agreements for new supply sources

Both Salt Lake and Utah counties have water source protection ordinances as well. Salt Lake County municipal code Title 9, Chapter 9.25, Water Source Protection, establishes water source protection zones where land use is regulated to minimize the potential for pollution impacts to drinking water sources. Specific land uses are restricted or prohibited based on the potential for contamination and the distance from the water source. Utah County code Chapter 10, Health, Article 10-8, Utah County Drinking Water Source Protection Provisions, establishes water source protection zones around wells and springs that are used by public water systems in the county. The regulation identifies prohibited uses and the requirement that any land use development approval must comply with the provisions of the regulation.

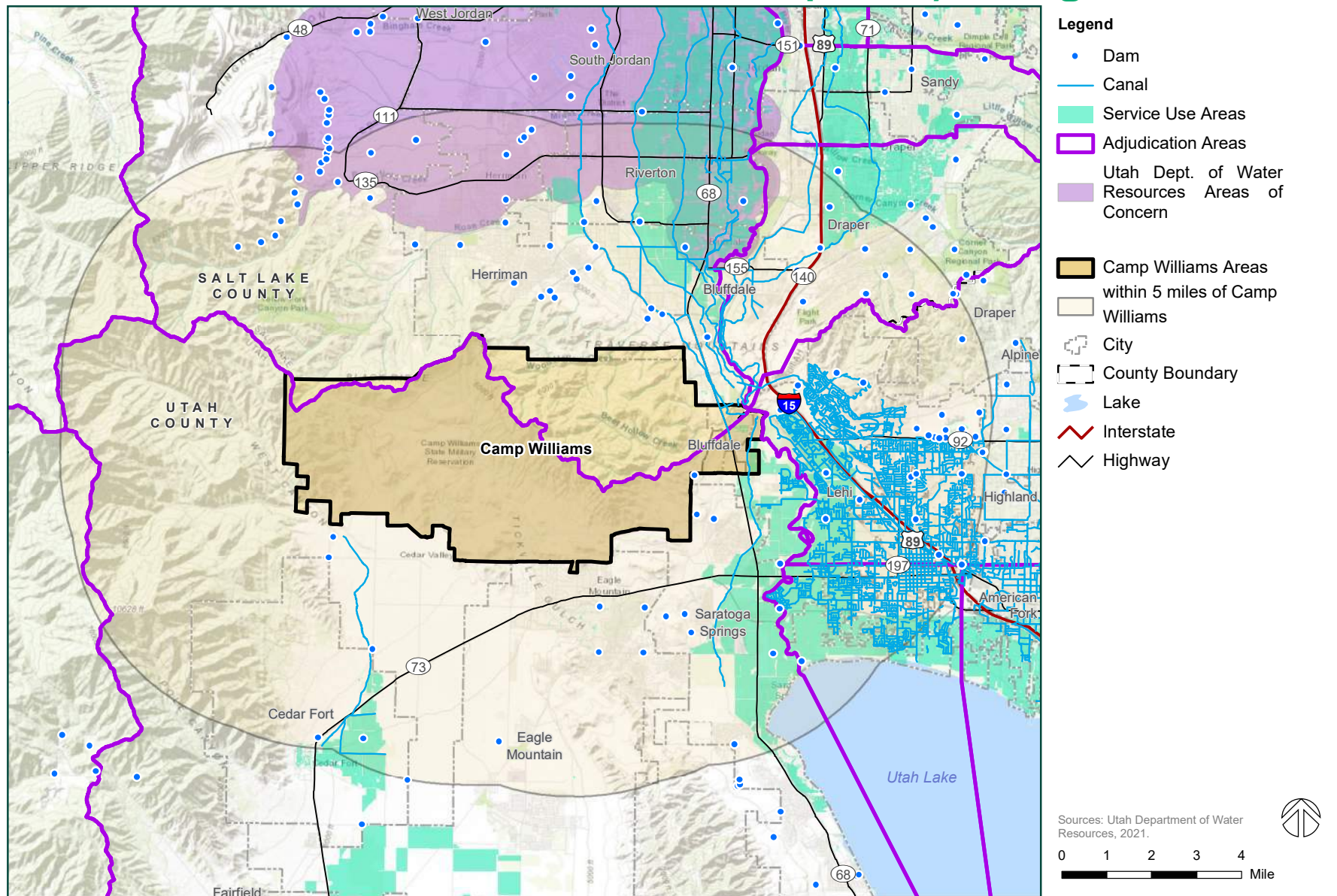
Camp Williams also uses groundwater as a source of water supply. Groundwater wells #2 and #3 located on the installation, are used to

pump groundwater into the water system storage, treatment, and distribution infrastructure. The wells are drilled into a deep groundwater aquifer at approximately 820 and 500 feet deep respectively. The aquifer under Camp Williams is semi-confined and has not yet been officially classified by the State of Utah. Figure 5.17 shows the location of the groundwater wells to the east and west of the cantonment area.

A future concern related to Camp Williams groundwater wells is, as development continues in the area around the installation, additional wells being drilled into the aquifer to support residential commercial needs. Future over pumping of the aquifer could potentially reduce the water levels to the point where the existing Camp Williams wells become impacted.

Development activities around Camp Williams have the potential to impact the water supply sources, particularly those sources located outside the installation boundary. As Salt Lake County and Utah County continue to grow more development will occur, and additional sources of water will be required. The Hidden Valley Springs, deep groundwater wells, and other installation water supply sources require careful management to ensure their availability for current and future mission support.

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WQQ-3

Stormwater flow in Tickville Gulch impacts installation riparian habitat and has the potential to affect land off the installation.

Tickville Gulch drains off Camp Williams to the south towards Eagle Mountain eventually leading to Utah Lake. The channel is heavily incised and impacted by stormwater flows and associated erosion. There is the potential for sediment transport off the installation.

Compatibility Assessment

Due to the topography, stormwater on Camp Williams drains in an east-west direction on the eastern portion of the installation (Beef Hollow and Cedar Fort). On the western portion of the installation, near Tickville Oak Springs, stormwater flows in a north-south direction. Due to the arid environment many of the washes on Camp Williams are typically dry and only after storm events or snow melts is there stormwater flow. Most of the channels and washes on the installation are incised due to storm flows which results in erosion. The Camp Williams INRMP states that the Tickville Gulch is one of the more severely eroded channels.

Tickville Gulch is the largest channel on the installation. It is fed by underground springs in the northern part of the watershed as well as by stormwater flows. Stormwater runoff traveling through the Tickville drainage has caused severe channeling and erosion, especially in the southern portion of the range. Tickville Gulch has small areas of wetlands along the riparian habitat, some of which have historically been impacted by grazing cattle. The deep erosion in Tickville Gulch has the potential to impair the riparian and floodplain functions of the nearby habitat. Excessive soil erosion can increase the sediment in the water leading to lesser quality habitat for vegetation and wildlife.

Mission impacts can result from excessive erosion and land degradation limiting the areas that can be used for training purposes. Natural resource conditions that currently affect the accomplishment of the military mission, or could potentially impact the mission if not

adequately addressed, include excessive channelization and gullyng in the lower Tickville Gulch drainage.

Stormwater flow through the Tickville drainage area not only presents a stormwater management concern for Camp Williams but has potentially adverse implications for properties south of Camp Williams in Utah County and Eagle Mountain. The Eagle Mountain General Plan notes the northern area of the community is located in an area that is affected by high intensity runoff patterns from mountains and foothills higher in the watershed. Heavy storm flows and flash flood conditions can bring large amounts of silt, plant matter, and other debris that plug culverts and create additional flooding and erosion. The flow of stormwater through the base onto properties south of the base could bring sediment and contribute to erosion and gullyng on properties located off the installation. To manage the impacts of stormwater, the City has required developments in the area, such as Valley View, to establish 25-foot, unfenced easements along Tickville Wash to ensure the City has access to keep areas clear of debris and other impediments to stormwater flows.

Camp Williams has a Tickville Watershed Management Plan designed to restore the Tickville drainage and restore the habitat to ensure the military mission is not impacted, the area is suitable for wildlife, and compliance with stormwater discharge requirements are maintained. The current INRMP also calls for additional planning analysis and implementation projects to reduce the severe erosion in the Tickville Watershed.

6

Implementation Plan

The Implementation Plan presents the recommended courses of action (strategies) that have been developed through collaboration among project partners. Since the WTM CAS is the result of a collaborative planning process, the strategies truly represent a consensus-based plan and a realistic and coordinated approach to compatibility planning.

The Implementation Plan is the heart of the WTM CAS and includes a variety of actions that promote education, communication, compatible land use, and resource planning. Upon implementation of the strategies, existing and potential compatibility issues arising from the civilian/military interface can be eliminated or significantly mitigated.

The CAS is not an enforceable plan, but rather a set of recommendations. The key to successfully implementing the strategies is the establishment of a WTM CAS Partnership Committee to monitor progress and to address future compatibility issues as they arise.

The WTM CAS serves as a planning tool to assist in guiding compatible growth and maintaining the balance between the needs and interests of both the community and the military. The goal of compatibility planning is to promote an environment where both community and military entities communicate, coordinate, and implement mutually supportive actions.

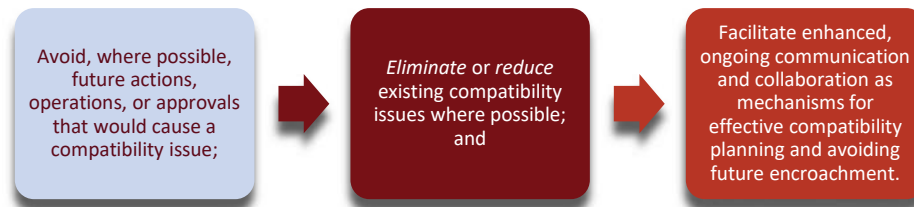
6.1 Implementation Plan Guidelines

The key to a successful implementation plan is balancing the different needs of all involved stakeholders. To produce an equitable plan, several guidelines were used as the basis for strategy development:

- Recommended strategies must not result in the taking of property value, meaning rendering the property undevelopable or unable to achieve economic gain by the removal of development rights defined by state law. Some of the recommended strategies involve establishing conservation easements on private property, but only if landowners are willing to take such actions.
- To avoid issues relating to the non-compliance of existing land uses, any zoning amendments or regulatory changes should include “grandfather” clauses to allow existing legal uses to be retained.
- Any proposed changes to regulatory or policy guidance, such as to zoning ordinances or general/comprehensive plans, should not affect properties that have existing entitlements or that have been previously approved for development.
- To minimize regulation, the implementation of some strategies is recommended only within the specific geographic areas where the relevant issues occur.
- Some recommended strategies can be implemented only with new legislation.
- Any strategy that involves developing new regulatory measures or updating existing ones, such as amending zoning ordinances or adding new zoning overlay districts to existing zoning ordinances, and any strategy that amends municipal guidance documents, such as community general plans or county comprehensive plans, is subject to all legal processes required by the State of Utah and local jurisdictions before implementation. Consequently, some recommended strategies may involve the notification of affected and potentially affected property owners and/or land management entities, as well as public hearings.
- As in other planning processes that include numerous stakeholders, the challenge here is to create a solution or strategy for outcomes that meet the needs of all parties. In lieu of eliminating strategies that do not have complete buy-in from all stakeholders, each strategy may be further refined to create multiple approaches that address the same issue in tailored, community-specific ways.
- Since state and federal regulations are subject to change, implementing jurisdictions or parties should ensure that no conflicts have arisen between strategies and local, state, or federal laws prior to implementation.

6.2 How to Read the Implementation Plan

The strategies presented in this chapter address the compatibility issues that were identified while preparing the WTM CAS and constitute the CAS Implementation Plan. The purpose of each strategy is to:



The strategies include information on when and how they should be implemented and are grouped according to the compatibility issue they address. The Implementation Plan is presented in table format with each component defined below.

Issue Box. The issue box that identifies the specific compatibility issue being addressed is presented before each recommended strategy or set of strategies. A column to the right of the issue statement identifies the degree of importance that the issue holds for affected communities and/or the installation.

Strategy Box. The descriptive title of each strategy is presented in bold in the strategy box. Each title starts with a unique alpha-numeric identifier that provides an easy reference and further encodes the related, general compatibility factor abbreviation and a unique numeric identifier (e.g., COM-1, COM 1B, etc.). This descriptive title is followed by the complete strategy statement, or recommended action.

Strategy Rows. Each strategy is presented in two rows in the table. The first row includes a description of the strategy and the parties who are responsible for its implementation. The second row identifies the type


of strategy, the timeframe suggested for implementation, the area where the strategy should be implemented, and the level at which implementation is prioritized.

Responsible Party Column. A column along the right side of the strategy boxes identifies the stakeholders who should serve as either a “Responsible Party” or a “Partner.” Responsible Parties are responsible for implementing the strategy, while Partners play supporting roles.

Strategy Type Box. This box identifies the type of tool that a strategy constitutes. Strategy types are indicated by the icons shown below. Some strategies constitute multiple types, such that multiple icons will be listed.

	Acquisition		Coordination/Communication
	Education/Awareness		Easement
	Legislative		General Plan/Comprehensive Plan
	Partnership		Planning
	Policies		Process
	Real Estate Disclosure		Regulations
	Study		Zoning

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Strategies that are marked with an  icon may be eligible for follow-on implementation funding from the Office of Local Defense Community Cooperation. Parties responsible for implementation will have to apply for and be awarded OLDCC or other grants. Designation via this icon in the CAS Implementation Plan represents a potential funding opportunity, with eligibility determined by the granting agency or agencies. It should be noted that OLDCC funds communities and local government organizations but not to the U.S. Army or other DoD entities.

Timeframe Box. This box presents the recommended timeframe in which a strategy should be implemented. The timeframes represent multi-year periods during which strategies should be initiated or indicate actions should be ongoing, whether continuous, intermittent, or as needed.



Short-term (0-2 years). Strategy is to be initiated within 0-2 years following CAS completion.



Mid-term (2-5 years). Strategy is to be initiated within 2-5 years following CAS completion.



Long-term (5+ years). Strategy is to be initiated in 5 or more years following CAS completion.



Ongoing. Strategy is to be implemented on a continuous, intermittent, or as needed basis.

Geographic Area Box. This column indicates the YPG MCA(s) or MCAOD where the strategy should be applied. If the strategy is not tied to an MCA, the term “N/A” indicates there is no single, bounded area in which implementation is recommended.

Priority Box. Similar to level of importance, this box indicates the degree to which implementation of a strategy is a priority. Implementation may be a low, medium, or high priority.

6.3 Implementation Plan

Air Quality (AQ) Issues

AQ-1: There is concern about the degrading air quality in the region as a result of continued development and urban sprawl.

The West Traverse Mountain Study Area is located in one of the fastest growing regions in the country. Associated with this growth is economic development that brings various sources of air pollution, both mobile and stationary, that are having an impact on the air quality in the Study Area and region at large. Air pollution in the area has the potential to affect quality of life for communities and the military mission at Camp Williams.

Recommended Strategy

AQ-1A: Pursue Utah Clean Air (UCAIR) grant funding.

Coordinate with local jurisdictions to acquire a Utah Clean Air (UCAIR) grant that supports actions to reduce emissions from area sources (residential and commercial), projects and programs targeting summertime air pollution, or programs utilizing emerging technologies to reduce emissions.

Responsible Party(ies)

- Utah Division of Air Quality

Partner(s)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Strategy Type



Timeframe



Priority



West Traverse Mountain Compatibility Area Study

AQ-1B: Implement proactive actions such as unimproved roadway dust reduction measures to reduce PM10/2.5 emissions from range operations.

Camp Williams should continue to coordinate roadway dust reduction and air quality requirements regionally so there are no significant impacts to military mission requirements. In addition, coordinate with the Utah Department of Environmental Quality, Air Quality for planned ground maneuvers and construction activities, and on activities that require a federal or regional environmental study. Camp Williams should also explore options for additional coordination early in the planning process to avoid delays in obtaining any required air permits.

Strategy Type



Timeframe



Responsible Party(ies)

- Utah Division of Air Quality

Partner(s)

- Salt Lake County: Air Quality Bureau
- Utah County: Bureau of Air Quality
- Camp Williams

Priority



AQ-1C: Amend Utah administrative code R307-309-6 to require latest measures/best practices in dust plans.

Amend Utah administrative code R307-309-6 to require local governments and agencies to incorporate in their fugitive dust plans the latest measures and best practices that comply with the National Ambient Air Quality Standards for development and other earth-moving activities (i.e., training exercises, convoy training).

Strategy Type



Timeframe



Responsible Party(ies)

- Utah Division of Air Quality

Partner(s)

- Salt Lake County: Air Quality Bureau
- Utah County: Bureau of Air Quality

Priority



Biological Resources (BIO) Issues

BIO-1: There is concern about the future status of “sensitive species” at Camp Williams and potential impacts to training activities at the installation.

The listing of federally threatened or endangered species on Camp Williams has the potential to affect military training operations. In some cases, species initially identified as species of concern/sensitive species may eventually be listed at the federal level.

Recommended Strategy

BIO-1A: Jurisdictions and agencies should work with USFWS and UDWR to develop a regional approach to managing threatened, endangered, sensitive, and other species of concern.

A regional approach would ensure equal responsibility and prevent Camp Williams from having to “bear the brunt” of sensitive species habitat management efforts.

This regional planning approach should develop appropriate mitigation measures to support sensitive species and their habitats across the region.

Recommend this strategy can be integrated with land use strategy LU-2F to continue to promote, support, and advocate for federal recognition of the state-recognized West Traverse Sentinel Landscape. Regional designation of sensitive habitats within a Sentinel Landscape can promote the value for federal recognition of this landscape.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- USFWS
- UDWR
- Camp Williams

Strategy Type



Timeframe



Priority





Communication/Coordination (COM) Issues

COM-1: Opportunity for enhanced coordination between Camp Williams and adjacent jurisdictions/stakeholders to address mutual issues.

No formal coordination exists to proactively address land use, transportation, and other infrastructure compatibility issues between the surrounding jurisdictions and Camp Williams.

Recommended Strategy

COM-1A: Develop a charter for the Camp Williams Partnership Committee.

The Camp Williams Partnership Committee should develop a charter that formalizes the group, as well as its purpose, objectives, members, and members' roles and responsibilities. as the charter should include information such as, but not limited to, the following:

- Committee purpose
- Committee membership
- Point of contact and contact information for each organization / partner and membership directory
- Members', their affiliated agencies', and partners' roles and responsibilities in addressing compatibility issues
- Meeting frequency
- Triggers for coordination and communication among members and partners (e.g., infrastructure planning, water resources planning, alternative energy development proposals, economic development opportunities, mission changes, etc.).







This Partnership Committee can also serve as the working group for the implementation of WTM CAS recommendations.

Responsible Party(ies)

- Camp Williams Partnership Committee
CAS Implementation Working Group and/or local communities

Partner(s)

- Mountainland Association of Governments (MAG)
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort
- UDOT

Strategy Type	Timeframe	Priority
		
COM-1B: Invite Camp Williams representative to serve as a non-voting technical advisor.		
<p>Invite a Camp Williams representative to serve as a non-voting technical advisor to nearby jurisdictions' planning commissions/groups to allow the Camp input on proposed developments that may impact the mission. Formalize the position through a resolution or Memorandum of Agreement (MOA) or Understanding (MOU). It may not be necessary for the Camp Williams representative to attend every meeting, with attendance based on relevance and staff availability.</p>		Responsible Party(ies) <ul style="list-style-type: none"> ■ Salt Lake County ■ Utah County ■ Herriman City ■ Bluffdale City ■ Lehi City ■ City of Saratoga Springs ■ Eagle Mountain ■ Town of Cedar Fort
		Partner(s) <ul style="list-style-type: none"> ■ Camp Williams
Strategy Type	Timeframe	Priority
		
COM-1C: Incorporate Camp Williams as one of the agencies that reviews pre-development applications/proposals.		
<p>Establish an MOU between Camp Williams and jurisdictions, formalizing a process that provides copies of all conditional use, master plan, subdivision, rezoning, annexation, etc. submittals located within the Land Use MCA to be reviewed by Camp Williams. Such review periods shall conform to existing community review periods for comment. This supports a proactive approach to identifying potential conflicts early in the proposed development application phase.</p>		Responsible Party(ies) <ul style="list-style-type: none"> ■ Salt Lake County ■ Utah County ■ Herriman City ■ Bluffdale City ■ Lehi City

West Traverse Mountain Compatibility Area Study

Strategy Type



Timeframe



COM-1D: Apply for additional OLDCC Funding for Implementation of key CAS recommendations.

Mountainland Association of Governments should work with the Camp Williams Partnership Committee to identify key CAS recommendations eligible for OLDCC funding for the implementation phase of the CAS. The recommendations included as proposed projects in a grant application must meet OLDCC grant requirements.

Strategy Type



Timeframe



- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams

Priority



Responsible Party(ies)

- MAG

Partner(s)

- Camp Williams Partnership Committee
CAS Implementation Working Group

Priority



COM-2: Transportation planning and regional road infrastructure coordination is limited between Camp Williams and the Utah Department of Transportation.

There is no formalized communication between UDOT, the Metropolitan Planning Organization, Camp Williams and Utah Army National Guard. Camp Williams is situated within a highly constrained, north-south transportation corridor, and the Mountain View Corridor extension bisecting Camp Williams is under construction. This project seeks to relieve traffic from I-15 but will also promote other road improvement/construction projects around the cantonment area.

Recommended Strategy

COM-2A: Coordinate a routine meeting between Camp Williams and UDOT.

A bi-annual coordination meeting should help inform UDOT of any new or upcoming Camp Williams mission requirements and provide Camp Williams with awareness of upcoming transportation projects to help adjust testing and training schedules as needed to minimize interference. The meeting may also be utilized to help POC meet with their counterparts in each agency.

Strategy Type



Timeframe



Responsible Party(ies)

- Camp Williams

Partner(s)

- UDOT

Priority



COM-2B: Include Camp Williams within the regional transportation planning process.

Camp Williams should be invited to participate as an active ex-officio member on regional planning boards and included in planning forums for the development of regional transportation plans and updates.

Inclusion of Camp Williams in regional transportation planning boards and forums promotes recognition of its equity as a federal and state military jurisdiction on a level playing field with other regional equities, and help to ensure that Camp Williams does not bear a disproportional impact in regional transportation solutions.

See IE-2 for associated issue/strategy.

Strategy Type



Timeframe



Responsible Party(ies)

- UTARNG
- MAG
- WFRC
- UDOT

Partner(s)

- Camp Williams

Priority





Frequency Spectrum Interference/Impedance (FSI) Issues

FSI-1: New telecommunication tower development is not coordinated with Camp Williams.

Cellular network and other communication tower development around Camp Williams may cause interference with military frequencies and potentially pose a vertical obstruction hazard to low-flying military aircraft.

Recommended Strategy

FSI-1A: Update zoning on communication towers.

Work with West Traverse Mountain Partnership Committee members to establish zoning ordinances for towers, requiring review from the installation subject matter experts for siting of communication towers within the CAS Study Area. Establish requirements within compatibility overlay districts as recommended by the 2012 Camp Williams Joint Land Use Study. Encourage structures that generate and provide frequency services (i.e., radio towers) be located outside the Military Compatibility Overlay District.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams

Priority



Strategy Type



Timeframe



Infrastructure Extensions (IE) Issues

IE-1: Future infrastructure extensions may support incompatible development

If future infrastructure construction in local jurisdictions does not take compatibility planning into consideration, the Camp William mission may be at risk from new encroachment and incompatible development.

Recommended Strategy

IE-1A: Encourage proposed overhead utility and service lines to be located within existing utility easements and rights-of-way.

Plan new and proposed overhead electrical lines within existing utility service corridors, where possible, and in accordance with the 2012 JLUS compatibility guidelines to prevent potential encroachment.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Energy Transmission Providers
- Local Utilities

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

IE-B: Coordinate and update regional and local utility service plans with Camp Williams.

Coordinate with Camp Williams when updating utility service master plans and maps. Update the service plans in accordance with the JLUS compatibility guidelines to encourage future extensions within established corridors.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams
- Local utility companies

Strategy Type



Timeframe



Priority



IE-2: Concern with potential growth impacts associated with the Mountain View Corridor extension through eastern Camp Williams.

The Mountainview Corridor extension alignment will run through the eastern portion of Camp Williams, providing an additional transportation connection between the Ogden region and Salt Lake City region. Future plans call for several connecting corridors between the Mountain View Corridor and Interstate 15. The new roadway and connections will increase the potential for new utility infrastructure extensions in areas that may directly impact the Camp Williams mission and facilities infrastructure.

Recommended Strategy

IE-2A: Infrastructure planning and development review.

Establish a formal process and supporting MOAs such that jurisdictions ensure Camp Williams is provided advance notification and opportunity to review and comment on local infrastructure extension plans, associated rights-of-way, utility major development, transportation plans, and similar activities that support new development located within 5 miles of the installation.

See COM-2 for associated issue/strategy.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Bluffdale City
- City of Saratoga Springs
- Wasatch Front Regional Council Metropolitan Planning Organization
- MAG
- Metropolitan Planning Organization (MPO)
- UDOT

Partner(s)

- UTARNG
- Camp Williams

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

IE-2B: Develop an MOA between Camp Williams and regional transportation planning organizations (e.g., MAG, WFRC, etc.).

An MOA must be developed to formalize the integration of Camp Williams as a participant in the development/update of regional transportation plans and to codify the parameters of the Camp/UTARNG's role.

See COM-2 for associated issue/strategy.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Wasatch Front Regional Council Metropolitan Planning Organization
- UDOT
- MAG
- WFRC
- MPO

Partner(s)

- Camp Williams

Priority



Strategy Type



Timeframe



IE-3: Incompatible land uses within safety zones.

Safety zones identified in the 2012 JLUS have existing incompatible land uses and future identified incompatible land uses. This creates a potential hazard for helicopter operations and the health, safety, and welfare of the general public within the safety zones.

Recommended Strategy

IE-3A: Update Jurisdiction Zoning map and codes to reflect Military Aviation Safety MCA as recommended by the 2012 Camp Williams JLUS.

Can be within a 5-mile buffer or extend to safety zones/noise contours if applicable) to reduce future incompatible land uses. Height restrictions should be amended to not exceed 200 feet and should comply with Federal Aviation Regulation (FAR) Part 77 to ensure unobstructed airspace.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams
- UTARNG State Army Aviation Office (SAAO)

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

IE-3B: Provide educational materials to local planning jurisdictions. Create educational materials with information about appropriate land uses within safety zones.

Provide to local planning jurisdictions and WTM Partnership Committee members.

Responsible Party(ies)

- Camp Williams Partnership Committee
CAS Implementation Working Group

Partner(s)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort
- Camp Williams

Strategy Type



Timeframe



Priority



Land/Airspace Competition (LAS) Issues

LAS-1: Utah School and Institutional Trust Lands Administration (SITLA) owns land within Camp Williams' fence line.

Approximately 960 acres of land owned by SITLA are located within Camp Williams' boundary. The acreage comprises three land parcels situated in the middle of the training ranges but are not accessible to personnel using the ranges.

Recommended Strategy

LAS-1A: Advocate for and transfer the SITLA property title to the State Armory Board.

Continue to resolve impediments to executing land transfers with SITLA within the installation boundaries. Consider land swaps or other alternative strategies.

Responsible Party(ies)

- UTARNG
- SITLA

Partner(s)

- State of Utah

Strategy Type



Timeframe



Priority



West Traverse Mountain Compatibility Area Study

LAS-2: Increased use of civilian unmanned aerial systems in the future could impact military operations and generate security concerns.

It is likely that both military and civilian use of unmanned aerial systems (UAS) will increase in the future. The use of civilian UAS can cause safety and security concerns for the military if they are operated close to Camp Williams, particularly where aviation activities occur.

Recommended Strategy

LAS-2A: Develop and distribute informational brochures for safe UAS usage.

Develop an informational brochure on safe UAS operation in the WTM Study Area so each CAS community partner can distribute. These brochures should identify the areas that are and are not safe to operate UAS devices in the vicinity of Camp Williams and airspace, as well as civilian, commercial, and general aviation facilities and flight paths. These brochures should also include FAA information and resources, such as the B4UFLY mobile application and awareness of the FAA “No Fly Zones.”.

Responsible Party(ies)

- Camp Williams Partnership Committee CAS Implementation Working Group
- MAG

Partner(s)

- Camp Williams

Priority



Strategy Type



Timeframe



LAS-2B: Coordinate with local law enforcement.

The UTARNG should work with local law enforcement to assist the FAA and help enforce the established rules and regulations of unauthorized UAS use. Local law enforcement should issue fines to those using a UAS in an unauthorized area.

Responsible Party(ies)

- Local Law Enforcement Depts.

Partner(s)

- UTARNG
- FAA

Priority



Strategy Type



Timeframe



LAS-2C: The UTARNG and stakeholder communities should consider working with state government elected officials to enhance the Utah Code Title 72 Chapter 14 related to operation of UASs.

State law prohibits local ordinances regulating UAS operations, with some allowable exceptions. The state code should be modified to address the safe operation of UASs more clearly in the vicinity of UTARNG facilities, including Camp Williams.

Responsible Party(ies)

- UTARNG
- Camp Williams Partnership Committee CAS Implementation Working Group

Partner(s)

- State of Utah
- UTARNG
- FAA
- Local Airport Authority

Priority



Strategy Type



Timeframe





West Traverse Mountain Compatibility Area Study

LAS-3: The need for additional land in the Study Area to develop new roadways could result in mission impacts at Camp Williams.

Traffic congestion in the communities around Camp Williams continues to increase as economic growth drives new development. With limited undeveloped land to construct new roadways, there is a risk military lands may become an alternative location for new public roads. This would likely lead to mission impacts for Camp Williams.

Recommended Strategy

LAS-3A: Collaborate with MAG, UDOT, MPO, and local departments of public works.

Camp Williams should proactively notify and inform MAG, UDOT and MPO of changes on the installation, such as a potential relocation of main entry control point, which may impact the State Highway system as early in the planning process as possible.

Responsible Party(ies)

- Camp Williams
- UTARNG CFMO

Partner(s)

- MAG
- MPO
- UDOT
- Local Departments of Public Works

Strategy Type



Timeframe



Priority



LAS-3B: Conduct a military transportation needs study and traffic safety assessment for Camp Williams.

The regional transportation planning agency(ies) should conduct a military transportation needs assessment for Camp Williams. The study should serve, at a minimum, the following purposes.

- Determine military transportation needs.
- Provide a safe and efficient transportation network for the military and civilian community around Camp Williams.
- Identify areas of greatest traffic congestion and times it occurs.
- Establish priority areas for improvement.

Develop strategies to address the issues / concerns identified

Strategy Type



Timeframe



Responsible Party(ies)

- MAG
- WFRC
- MPO

Partner(s)

- UDOT
- Local Public Works Depts
- Camp Williams

Priority



Land Use (LU) Issues

LU-1: Incompatible Future Land Use Designations.

Some jurisdictional future land use designations around Camp Williams may be incompatible with Camp Williams' missions and thus may not protect public health, safety, and welfare.

Recommended Strategy

LU-1A: Create Military Compatibility Area Overlay District (MCAOD), comprised of -Land Use MCA, Impulse Noise MCA, Aviation Safety MCA, and a Light MCA.

The MCA would propose compatible land uses, height restrictions, dark sky, light and glare standards, and other compatibility regulations as recommended by the 2012 Camp Williams JLUS.

Responsible Party(ies)

- Camp Williams Partnership Committee CAS Implementation Working Group
- MAG

Partner(s)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort
- Camp Williams

Strategy Type



Timeframe



Priority



LU-1B: Update City and County general plans to include military compatibility policies that support the MCAOD and promote compatible land uses.

Update and adopt the jurisdiction's future land use map, specifically within the MCA, and supportive goals, objectives, and policies that encourage a compatible land use pattern for appropriate capital improvement investments. Include Camp Williams as one of the stakeholders in the development of the plan.

Responsible Part(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

LU-1C: Develop an installation master plan illustrating existing land uses and any future land use changes.

Coordinate master plan with all jurisdictions within the Study Area to inform general and area development plans to identify what type of land uses are compatible adjacent to the installation boundary. UTARNG is currently developing the Camp Williams installation master plan.

Responsible Party(ies)

- Camp Williams

Partner(s)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Strategy Type



Timeframe



Priority



LU-2: Development pressures within close proximity to Camp Williams.

Local jurisdictions continue to receive development applications for master planned developments in areas that are within close proximity to Camp Williams. In addition, schools may be located in areas that are immediately adjacent to Camp Williams. These types of sensitive land use developments have the potential to create long-term incompatibilities with operations on Camp Williams.

Recommended Strategy

LU-2A: Update jurisdiction land development codes and ordinances.

Update land use map and development code to be consistent with any changes or updates that may have occurred to the future land use plan/General Plan Update developed under LU-1A.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams
- UTARNG

Strategy Type



Timeframe



Priority



West Traverse Mountain Compatibility Area Study

LU-2B: Coordinate school district master plans with Camp Williams.

School Districts coordinate and consult with Camp Williams prior to identifying future school sites. Other agencies: School Districts.

Strategy Type



Timeframe



Responsible Party(ies)

- Surrounding Communities' Local School Districts

Partner

- Camp Williams

Priority



LU-2C: Include Camp Williams in reviewing any type of Bureau of Land Management development applications within the MCAOD.

Take a proactive approach in partnering to prevent any type of mining or other non-compatible activities through an early application review process.

Strategy Type



Timeframe



Responsible Party(ies)

- BLM

Partner(s)

- Camp Williams

Priority



LU-2D: Amend land development code setback requirements for property adjacent to Camp Williams.

Where possible, require additional property setbacks from the boundary, noise contours, and safety zones for Camp Williams.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

LU-2E: Leverage federal funding opportunities. continue pursuing ACUB, REPI, BRIC, and Sentinel Landscape funds to acquire conservation or agricultural easements of non-federal lands.

Utilize federal and non-profit organization funding to preserve non-federally owned land through fee simple or agricultural or conservation easements enabling military mission compatibility in the future.

Strategy Type



Timeframe



Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- OLDCC
- Camp Williams

Priority



LU-2F: Continue to promote, support, and advocate for the West Traverse Sentinel Landscape.

The State of Utah should continue to fund WTSL.

Strategy Type



Timeframe



Responsible Party(ies)

- State of Utah
- WTSL

Partner(s)

- State of Utah
- Utah National Guard

Priority



LU-2G: Collaborate for the extension of the Bonneville Shoreline Trail and continued preservation of public trails, parks, and open spaces around Camp Williams.

Salt Lake County, City of Bluffdale, Lehi and Saratoga Springs, Utah County and MPOs should collaborate with Camp Williams to identify opportunities for trails, parks, cultural protection, and land preservation areas along the Jordan River and trail connectivity with alternative modes of transportation infrastructure. Special consideration should be given to the extension of Bonneville Shoreline Trail and connectivity with Yellow Fork and Rose Canyon special use regional parks.

The future phase out of Rio Tinto Kennecott mining operations offer another opportunity for collaboration for the preservation of open spaces mutually benefitting public access to open spaces and preservation of Camp William's training mission.

Current and future public parks, trails, recreation areas, and open spaces can be combined with Sentinel Landscapes to promote greater shared equities for the application of federal grant programs.

Responsible Party(ies)

- Salt Lake County
- City of Bluffdale
- Lehi City
- City of Saratoga Springs
- Eagle Mountain City
- Cedar Fort

Partner(s)

- MAG
- WFRC
- Utah State Parks
- Camp Williams
- BLM
- Advocacy Groups
- Non-Profits
- Rio Tinto Kennecott

Strategy Type



Timeframe



Priority



West Traverse Mountain Compatibility Area Study

LU-3: Incompatible land uses within modeled noise threshold areas.

Military noise zones identified in the 2012 JLUS have existing incompatible land uses and future identified incompatible land uses. This creates a potential hazard for health, safety, and welfare of the general public.

Recommended Strategy

LU-3A: Define and establish a Military Compatibility Area.

Camp Williams with partner jurisdictions should define a Military Compatibility Area that reflect the types and intensity of compatibility issues. Implementation of the MCA and associated strategies for this area will facilitate:

- Creating a broader framework for making sound planning decisions around the installation and areas subject to military overflight;
- More accurately identifying areas that can affect or be affected by military missions;
- Protecting the public's health, safety, and welfare;
- Protecting the military mission;
- Creating a compatible mix of land uses; and
- Promoting an orderly transition and rational organization of land use around Camp Williams and operating areas.

Responsible Party(ies)

- Camp Williams Partnership Committee CAS Implementation Working Group

Partner(s)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort
- Camp Williams

Strategy Type



Timeframe



Priority



Legislative Initiatives (LEG) Issues

LEG-1: Absence of state legislation addressing compatible planning around military installations encourages unregulated/uncontrolled development near military installations.

Utah State Land Use Planning Laws do not consider the impacts of military training operations on the general public, nor do they account for the community growth impacts and activities on military mission readiness and training.

Recommended Strategy

LEG-1A: Military compatible planning legislation.

Develop legislation requiring local jurisdictions within a defined distance from military installations to establish formal notice/comment process on submitted development plans, and changes to general/comprehensive plans, and their compatibility with the installation's mission.

Responsible Party(ies)

- Camp Williams Partnership Committee CAS Implementation Working Group

Partner(s)

- State of Utah
- Camp Williams

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

LEG-1B: Amend Utah Administrative Code R307-309-6 to mandate updates of dust plans.

Develop legislation to amend the Nonattainment, and Maintenance Areas for PM10: Fugitive Emissions and Fugitive Dust Rule, to require a five-year update of dust plans to ensure that the use of current technology and dust mitigating practices are employed in planning and construction.

Responsible Party(ies)

- Camp Williams Partnership Committee CAS Implementation Working Group

Partner(s)

- State of Utah

Priority



Strategy Type



Timeframe



Light and Glare (LG) Issues

LG-1: Urban development generated light ordinance and glare can create incompatibilities with Camp Williams.

UTARNG helicopter pilots and ground personnel use night-vision goggles to train. The nighttime presence of intense light and glare (sky glow) from civilian development can reduce or completely restrict visibility for aviators and ground personnel.

Recommended Strategy

LG-1A: Develop standard military compatibility lighting standards.

UDOT and the eight local jurisdictions should work together to implement (and potentially retrofit) lighting standards along roadways within the Light MCA to balance safety with nighttime training at Camp Williams. This would also minimize regional roadway light trespass.

International Dark-Sky Association (IDA) and the Illuminating Engineering Society (IES) promote technical standards for public outdoor lighting that also provide long-term maintenance and operations cost savings.

Find more about this at: <https://www.darksky.org/our-work/lighting/>

Responsible Party(ies)

- UDOT
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams
- Local Utilities

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

LG-1B: Construct all street light poles with downward shielded lighting fixtures and within the height restrictions.

To protect the public health, safety, and welfare, plan and construct street light poles and fixtures per the IDA and IES recommend guidelines.

International Dark-Sky Association (IDA) and the Illuminating Engineering Society (IES) promote technical standards for public outdoor lighting that also provide long-term maintenance and operations cost savings.

Find more about this at: <https://www.darksky.org/our-work/lighting/>

Strategy Type



Timeframe



Responsible Party(ies)

- USDOT
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Local Utilities

Priority



LG-1C: Develop retrofit program with utility providers.

Partner with utility providers to develop a light fixture retrofit program for commercial and residential development in an effort to conserve energy, limit wasteful lighting and energy practices, and reduce urban sky glow.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Local Utility Companies
- Camp Williams

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

LG-1D: Work with Camp Williams and the surrounding communities to conduct a lighting study.

A lighting study/screening should focus on areas where light pollution may adversely impact the base's mission. This will determine for the communities what types of lighting regulations would be necessary to stop further light pollution in this area and region wide.

Responsible Party(ies)

- Camp Williams
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner

- Camp Williams

Priority



Strategy Type



Timeframe



LG-1E: Develop Public Education and Awareness for Dark Skies.

Develop public educational materials to promote public awareness on Dark Skies, benefits to military readiness and training, the environment and quality of life for residents. Develop brochures for commercial and residential applications of Dark Sky compliant outdoor lighting. Partner with local Dark Sky advocacy groups and/or environmental and conservation organizations.

Responsible Party(ies)

- MAG

Partner(s)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort
- Camp Williams
- Advocacy Groups
- Non-Profits

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

LG-1F: Adopt “Dark Skies” ordinances (or including these concepts into their existing regulations) that minimize urban sky glow and the potential for light trespass.

Develop specific zoning regulations to reduce light pollution and protect night skies from significant increases in ambient light and glare including requirements for fixtures that preclude uplighting and requirements for LED billboard lighting within navigable airspace. Coordinate with Camp Williams on acceptable types and extent of cultural lighting.

Strategy Type



Timeframe



Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams
- MAG

Priority



Noise (NOI) Issues

NOI-1: Helicopter overflights above residential homes can create noise and vibration impacts.

Cedar Fort community observes both day and night helicopter operations directly above residential homes. Military rotary-wing aircraft (helicopters) generate noise and vibration impacts off base. Military helicopters transiting from/to West Jordan and other training areas within the region generates noise and vibration, especially within areas located under Camp Williams' flight corridors.

Recommended Strategy

NOI-1A: Update the Land Development Ordinance to incorporate the comprehensive noise attenuation guidelines recommended in the most current DoD noise guidance.

See LU-3 for associated issue/strategy.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams

Priority



Strategy Type



Timeframe



West Traverse Mountain Compatibility Area Study

NOI-1B: Develop an informational/educational brochure about the noise generated from the operations that occur at the installation and in surrounding areas to include any low-level altitude operations.

Points-of-contact should also be included in this brochure. Local jurisdictions and other partners, such as the realty community, should help in the distribution of these brochures by making them available on local jurisdiction websites.

Consider application of this strategy in combination with LU-1E – Dark Sky brochures.

Strategy Type



Timeframe



NOI-1C: Document areas of noise complaints, source of complaint (if possible), and actions taken to address the complaint.

Provide noise complaint contact information on Camp Williams website.

Strategy Type



Timeframe



Responsible Party(ies)

- Camp Williams

Partner(s)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort
- Utah Board of Realtors
- Local real estate organizations

Priority



Responsible Party(ies)

- Camp Williams

Partner(s)

- Local Communities

Priority



NOI-1D: Enforce and educate the public about the “Fly Neighbor-Friendly” protocol.

Camp Williams should continue to follow the policy to “fly neighbor-friendly,” routing their rotary-wing traffic over rural areas.

Responsible Party(ies)

■ Camp Williams

Partner(s)

■ UTARNG SAAO

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

NOI-1E: Require real estate disclosure.

Require real estate disclosure to be included in all future land transactions within the noise contours at sale and at land transaction. Such disclosures should state that "Some or all said property being purchased may be within a Camp William's helicopter flight zone, and information regarding the flight path, as well as potential impacts to properties, can be obtained from the respective jurisdictions."

Pursue state enabling legislation if needed.

Responsible Party(ies)

- Camp Williams Partnership Committee CAS Implementation Working Group

- MAG

Partner(s)

- Utah Board of Realtors
- Local real estate organizations
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Strategy Type



Timeframe



Priority



NOI-2: Noise complaints are received from communities around Camp Williams.

Camp Williams receives noise complaints when significant live-fire or artillery-fire training schedules extend into evening hours and/or due to weather conditions.

Recommended Strategy

NOI-2A: Increase public notification regarding high-activity night training schedules.

Continue to make public announcements regarding upcoming military training and range activities, such as firing of artillery and night training. Review and enhance existing website, newspaper, television, and press conference protocols to increase public knowledge in advance of major training/live-fire exercises.

Strategy Type



Timeframe



Responsible Party(ies)

- Camp Williams

Partner(s)

- Surrounding jurisdictions' public information offices

Priority



NOI-2B: Enhance public education about Camp Williams' mission.

Develop resident and landowner factsheets or brochures that outline the mission and the community benefits that accrue from the training activities that take place on Camp Williams. Public education materials should be made available on the Camp Williams website.

Strategy Type



Timeframe



Responsible Party(ies)

- Camp Williams

Partner(s)

- Surrounding jurisdictions' public information offices

Priority



West Traverse Mountain Compatibility Area Study

NOI-2C: Host open house events.

Utilizing open house and installation tours and visits can provide enhanced insight on the military mission to educate all groups (i.e., building and development, community, and general public) about the unique mission at Camp Williams.

Strategy Type



Timeframe



Responsible Party(ies)

- Camp Williams

Partner(s)

- Surrounding jurisdictions' public information offices

Priority



NOI-3: Live fire, artillery fire, and munitions demolition on base generates off base noise and vibration.

Noise studies indicate that military training on demolition and artillery firing ranges generates noise and vibration impacts that are experienced off-base. Sensitive land uses such as residential, hospitals and schools may be incompatible in these areas.

Recommended Strategy

NOI-3A: Update the intensity and frequency of military generated noise in the data collected.

Conduct a comprehensive acoustic and vibration study of training/firing/maneuver/detonation activities to identify current noise contours (65 dB and higher in 5 dB increments) and identify areas off installation impacted by noise levels in excess of 65 dB that contribute to the creation of a 65 dB noise contour that extends to off-installation lands.

Strategy Type



Timeframe



Responsible Party(ies)

- Camp Williams

Partner(s)

- Camp Williams Partnership Committee CAS Implementation Working Group
- Regional land management agencies

Priority



NOI-3B: Conduct proactive information program with agencies that manage land uses.

Inform key sensitive users (i.e., school districts, religious institutions, contractors, etc.) relative to location, site design, and construction standards within the Impulse Noise MCA subzone.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams
- MAG

Strategy Type



Timeframe



Priority



West Traverse Mountain Compatibility Area Study

NOI-3C: Develop a voluntary sound attenuation retrofit program for residential uses.

Develop a program that provides guidance on sound attenuation standards for retrofitting existing residential and commercial facilities. Develop educational materials on the Sound Attenuation Program and use all types of media venues to educate the community.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- MAG

Priority



Strategy Type



Timeframe



NOI-3D: Require real estate disclosures.

Require real estate disclosure statements to be included in all future land transactions within the MCA at sale and at land transaction. Such disclosures should state that “some or all said property within the MCA. Information regarding the MCA, as well as potential impacts to properties, can be obtained from the respective jurisdiction.”

Other Agencies: Camp Williams Partnership Committee and Realtors

Responsible Party(ies)

- Camp Williams Partnership Committee CAS Implementation Working Group

Partner(s)

- MAG

Priority



Strategy Type



Timeframe



NOI-3E: Post additional signage.

Place street signs in areas and neighborhoods where noise from military training has been predicted in acoustical models to inform the public of potential for disturbance from military training.

Responsible Party(ies)

- UTARNG
- Camp Williams

Partner(s)

- Surrounding communities
public works departments

Priority



Strategy Type



Timeframe



NOI-3F: Amend/prepare supportive design guidance and standards to mitigate noise impacts.

For new construction, review and amend existing design guidelines and construction standards to maintain appropriate interior noise thresholds of 45 dB.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- MAG
- Local Builders Associations

Priority



Strategy Type



Timeframe





West Traverse Mountain Compatibility Area Study

NOI-3G: Recommend and amend local jurisdiction to require sound attenuation building standards for new construction.

Amend city and county building codes to require sound attenuation for new construction of noise sensitive land uses located in Impulse Noise and Safety MCA subzones. Structures shall be required to be designed and constructed so as to limit their interior noise level to no greater than 45 dB.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Local Builders Associations

Priority



Strategy Type



Timeframe



Public Trespassing (PT) Issues

PT-1: On-Base trespassing along portions of the boundary.

Trespassing onto Camp Williams causes security concerns for the installation and military personnel and causes safety concerns for trespassers. The public's health, safety, and welfare are at risk, as live-fire training is routinely conducted the installation.

Recommended Strategy

PT-1A: Increase situational awareness of the installation boundary using signage.

Install "No Trespassing – DANGER Live-Fire Area" signs along the horizontal distance every 100 feet along the perimeter of the installation for the public's health, safety, and welfare - specifically in areas frequented by hikers, hunters and mountain bikers.

Can be combined with strategy NOI-3E.

Responsible Party(ies)

- Camp Williams
- UTARNG

Partner(s)

- Salt Lake County
- Utah County
- BLM
- U.S. Forest Service
- Local Communities

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

PT-1B: Provide information on military operations and boundaries to recreationalists and tourists.

The UTARNG should work with regional agencies and jurisdictions to develop a general information packet to share with MAG, local trail guide authorities, users, and tourists using land within the CAS Study Area. This information should include an overview of the types of military training conducted, maps of military property boundaries, and contact information for the UTARNG.

This strategy can be combined with other public awareness strategies.

Responsible Party(ies)

- UTARNG

Partner(s)

- Regional Chambers of Commerce
- Regional agencies and jurisdictions
- MAG
- Trail guide businesses
- Utah office of Tourism
- Recreational and tourist organizations

Strategy Type



Timeframe



Priority



PT-1C: Establish minimum distance setback standards in master-planned communities which border Camp Williams.

Establish publicly owned trails or other cleared areas along installation boundaries to establish buffer that can also serve as firebreaks.

See also Strategies LU-2D, 2E, 2F and 2G.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams
- Utah Department of Natural Resources

Priority



Strategy Type



Timeframe



West Traverse Mountain Compatibility Area Study

PT-1D: Install more fencing.

In partnership with the adjacent land owners, the UTARNG should construct a physical fence barrier along the installation perimeter where the risk of trespassing is high, while taking major wildlife corridors into consideration.

Strategy Type



Timeframe



Responsible Party(ies)

- UTARNG

Partner(s)

- BLM
- Utah Fish and Wildlife Service
- U.S. Forest Service

Priority



PT-1E: Create visual indicators of active live-fire training.

Place red flags and signs along the perimeter of the installation to inform the public when the range is “hot” — that live-fire training exercises are occurring.

Strategy Type



Timeframe



Responsible Party(ies)

- Camp Williams

Partner(s)

- Local Communities

Priority



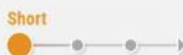
PT-1F: Develop an awareness program, “Visual Indicators for the Public.”

Continue to utilize public service announcements, websites, and email to inform the public regarding the meaning and significance of red flags along the installation perimeter. Local communities should partner to pass information to their residents and distribute any public education awareness products developed from strategies recommended by this implementation plan.

Strategy Type



Timeframe



Responsible Party(ies)

- Camp Williams

Partner(s)

- Local Communities

Priority



Roadway Capacity (RC) Issues

RC-1: The Camp Williams Main Gate is impacted by heavy traffic during certain time periods.

The Main Gate at Camp Williams is located directly off of Redwood Road/Highway 68, which is a major north-south corridor from Saratoga Springs to Salt Lake City. Limited queuing capacity at the Main Gate can result in traffic backing up onto Redwood Road, especially during periods of rush hour traffic.

Recommended Strategy

RC-1A: Pursue funding to relocate the Main Gate or create an alternative entrance

Camp Williams and the UTARNG Construction, Facilities and Maintenance Office (CFMO) should work to relocate the main entry gate further south off of West 10400 North Avenue in accordance with its master planning objectives. UTARNG will need to secure federal military construction funding in order to achieve this goal. Local defense communities and MAG can advocate support through the regional congressional delegation for funding appropriation for this need. Additionally, local communities can work with Camp Williams to pursue DCIP federal grant opportunities to offset related capital investment projects such as roadway enhancements or stormwater management.

Responsible Party(ies)

- UTARNG CFMO
- Camp Williams

Partner(s)

- UDOT
- MPO
- MAG
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

RC-1B: Add additional turn lane capacity for left/right turns into the main entrance.

A reduced speed zone approaching the intersection and/or additional signage warning of possible congestion could also mitigate traffic issues.

UDOT and local communities can work with Camp Williams to pursue DCIP federal grant opportunities supporting any mitigation project.

Responsible Party(ies)

- UDOT
- MAG
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs

Partner(s)

- Camp Williams
- UTARNG CFMO

Strategy Type



Timeframe



Priority



RC-1C: Evaluate opportunities to address issue using alternative work schedules or other non-structural options that would stagger traffic load during peak periods.

Camp Williams should evaluate, on an ongoing basis, utilizing and optimizing staggered work shift start times to spread out the number of personnel entering and exiting the base and reduce vehicle volumes during peak traffic times. Logistics operations and military conveyances should also be considered for scheduling off-peak arrivals and departures to/from Camp Williams.

Strategy Type



Timeframe



Responsible Party(ies)

- UTARNG
- Camp Williams

Partner(s)

- UDOT
- Local Communities

Priority





West Traverse Mountain Compatibility Area Study

RC-1D: Monitor traffic congestion until new Mountain View Corridor is constructed and determine if traffic congestion reduced as traffic patterns on Redwood Road change.

After completion of the Mountain View Corridor and after a period allowing for commuter adjustments to new routes, UDOT should conduct a traffic study on Highway 68 at Camp Williams current main and truck gates to determine if MVC has alleviated traffic congestion Redwood Road, and to also determine impacts of MVC on east-west commuter routes around Camp Williams.

Responsible Party(ies)

- UDOT

Partner(s)

- Camp Williams
- UTARNG CFMO
- MAG
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs

Strategy Type



Timeframe



Priority



Resiliency (RE) Issues

RE-1: Increased demand for power and other utility resources due to residential growth around Camp Williams.

Several communities surrounding Camp Williams are among the fastest growing in the State of Utah. Increasing populations and associated development drive the need for additional energy resource supplies and distribution capabilities.

Recommended Strategy

RE-1A: Seek funding to develop a community-based Climate Adaptation & Military Installation Resiliency (MIR) Plan in accordance with the Army Climate Resilience Handbook.

Local partners should pursue OLDCC federal grant funding opportunity to develop an MIR plan based on climate change, environmental and resiliency findings found in this Study.

See Strategy RE-2B.

Responsible Party(ies)

- MAG

Partner(s)

- UTARNG
- Camp Williams
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort
- Local Utilities

Strategy Type



Timeframe



Priority



West Traverse Mountain Compatibility Area Study

RE-1B: Pursue a Building Resilient Infrastructure and Communities (BRIC) grant for proactive investment in community resilience through hazard mitigation planning and the implementation of mitigation projects.

Partner organizations should evaluate opportunities to pursue federal BRIC funding grant opportunities for resiliency projects which mutually benefit Camp Williams and the surrounding communities. Specific opportunities for wildfire mitigation projects, emergency response, and public safety can be supported by findings within this study.

Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- FEMA
- UTARNG

Priority



Strategy Type



Timeframe



RE-1C: Evaluate opportunities for additional renewable energy supplies for both Camp Williams and surrounding communities.

Camp Williams should continue to seek DOD funding for the construction of additional renewable energy production such as improved wind, or solar energy technology to increase its energy portfolio.

Camp Williams should work with Rocky Mountain Power and the City of Lehi to explore opportunities for redundant electrical power service line.

Camp Williams should partner with local utility provider to pursue infrastructure improvements to ensure redundancy and the availability of power during any possible regional service disruptions.

Strategy Type



Timeframe



Responsible Party(ies)

- UTARNG CFMO
- Camp Williams

Partner(s)

- Camp Williams
- Rocky Mountain Power
- Lehi City Power

Priority



RE-1D: Seek redundant electrical power grid connection and develop microgrid capability to provide 14 days of electrical service in case of service disruptions (project currently in design).

Camp Williams and UTARNG CFMO should continue to pursue a partnership with a local utility provider, such as Lehi City Power, to pursue infrastructure improvements to ensure redundant connectivity and the availability of power during any possible regional service disruptions.

Strategy Type



Timeframe



Responsible Party(ies)

- Camp Williams

Partner(s)

- Lehi City Power
- Rocky Mountain Power

Priority





West Traverse Mountain Compatibility Area Study

RE-1E: Ensure Camp Williams is considered priority for both electrical and natural gas deliveries in the event of limited availability (similar to law enforcement/medical/etc.).

Camp Williams should work to establish a formal agreement with Rocky Mountain Power and the local natural gas suppliers to ensure the installation is identified as a priority for delivery of power and natural gas in the event of limited availability of service. This agreement would be similar to those used for community critical facilities/operations such as medical, emergency support, etc.

Responsible Party(ies)

- UTARNG CFMO
- Camp Williams

Partner(s)

- Local utility providers
- Local natural gas distributor

Priority



Strategy Type



Timeframe



RE-2: Prolonged drought combined with development raises the potential for wildland fire transfer to urban interface zones.

The West Traverse Mountain Study Area is located in a semi-arid climate where dry conditions and high summer temperatures coupled with natural fuel loading creates a risk for wildland fires. Wildland fires periodically occur in the region due to both natural and human causes and have the potential to impact both Camp Williams and surrounding jurisdictions.

Recommended Strategy

RE-2A: Consider updating comprehensive plans to incorporate policy about climate change and the impacts that are likely to occur in the region.

Camp Williams should develop a Military Installation Resiliency Plan to develop and implement a series of recommendations that make it more resilient to natural and man-made disasters. The Installation Resiliency Plan should identify requirements of critical assets, identify mission-critical activities for Camp Williams and surrounding communities, define interdependent infrastructure relationships and essential needs, develop opportunity costs for the implementation of resilient technologies, and develop metrics with which success can be measured for implementation.

Regional CAS partner communities should incorporate goals and policies related to climate change/resiliency planning into their respective general plans.

Responsible Party(ies)

- Camp Williams
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain

Partner(s)

- MAG

Priority



Strategy Type



Timeframe



West Traverse Mountain Compatibility Area Study

RE-2B: Seek funding to develop a Climate Adaptation & Military Installation Resiliency (MIR) Plan in accordance with the Army Climate Resilience Handbook.

Local partners should pursue OLDCC federal grant funding opportunity to develop an MIR plan based on climate change, environmental and resiliency findings found in this Study.

See Strategy RE-1A.

Strategy Type



Timeframe



Responsible Party(ies)

- MAG

Partner(s)

- UTARNG
- Camp Williams

Priority



RE-2C: Ensure wildland fire urban interface considerations are included in applicable policies, ordinances, and guidance.

Local emergency planning districts should update community hazard mitigation plans to include special considerations for mitigation wildland fire urban interface zones.

Salt Lake and Utah counties should update the Multi-Jurisdictional Hazard Mitigation Plan to identify the specific role and function of Camp Williams as it pertains to the safety of the region and joint wildland fire response.

Communities should create minimum vegetation standoff distances for residences that border Camp Williams and are in WUI areas identified by this study. Additionally, communities should actively promote WUI awareness for all residents in WUI areas and provide wildland fire mitigation information to homeowners.

Strategy Type



Timeframe



Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams
- MAG

Priority



Safety (SA) Issues

SA-1: Wildland fires on Camp Williams can cause mission impacts.

The ongoing drought, increasingly long fire season, and other weather-related hazards have increased the potential for more frequent and more severe wildland fires on Camp Williams. This increased potential for wildland fires can have a major impact on training operations, including delays, disruptions, and postponements of critical training activities that support national security and defense support operations.

Recommended Strategy

SA-1A: Continue to obtain wildland fire support via contract with the Unified Fire Authority and explore other mutually supporting fire response partnerships.

The contract for fire suppression response with Unified Fire Agency is a best practice that can be enhanced through partnerships for joint response infrastructure in the Camp Williams training areas, and potentially through partnership for joint stationing of additional fire suppression response capabilities on, or near, Camp Williams and extension of fire suppression infrastructure the down range training areas.

Strategy Type



Timeframe



Responsible Party(ies)

- Camp Williams

Partner(s)

- Unified Fire Authority

Priority



SA-1B: Continue to work with nearby communities to provide mutual aid support during major wildland fire events.

Camp Williams should review formal agreements and protocols on an annual basis. Recommend reviews be based on lessons learned from wildland fire fighting exercises and/or operational responses.

Responsible Party(ies)

- Camp Williams

Partner(s)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs



West Traverse Mountain Compatibility Area Study

Strategy Type



Timeframe



SA-1C: Continue to support and advocate for the West Traverse Sentinel Landscape to reduce wildland fire potential via active land management.

Future expansion of the state designated West Travers Sentinel Landscape, and application for federal designation of landscape should include contiguous areas to Camp Williams prone to wildfires that would benefit from active land management.

- Eagle Mountain
- Town of Cedar Fort

Priority



Responsible Party(ies)

- Camp Williams

Partner(s)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Strategy Type



Timeframe



Priority



SA-1D: Implement new prescribed burn operations and newly revised IWFMP.

Continue to execute other actions identified in the IWFMP to reduce fuel loads. Partner with local agencies to evaluate and conduct prescribed burn practices as part of a comprehensive fire mitigation strategy.

Strategy Type



Timeframe



Responsible Party(ies)

- Camp Williams

Partner(s)

- BLM
- SITLA
- Other public land agencies

Priority



SA-1E: Implement best management practices for vegetation management in the WUI.

Use fire-resistant plants, such as rock rose, in targeted landscapes, as recommended by Utah State University Cooperative Extension.

Strategy Type



Timeframe



Responsible Party(ies)

- Camp Williams
- Local communities

Partner(s)

- Utah Department of Natural Resources Forestry Division
- Utah State University

Priority





West Traverse Mountain Compatibility Area Study

SA-2: Wildland fires pose greater risk to WTM communities.

Communities located in the WTM region are under greater threat from wildland fires. This is especially true for those areas located in the wildland urban interface near Camp Williams. Areas that are close to the Camp Williams boundary may be at higher risk from the potential for wildland fires moving from undeveloped areas of the installation into the built residential communities via the WUI.

Recommended Strategy

SA-2A: Maintain and annually review mutual aid support agreements for wildland fire suppression support.

The agreements should also include federal and state agencies responsible for land management, such as the Utah Department of Natural Resources Forestry Division.

Responsible Party(ies)

- Camp Williams
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Utah Department of Natural Resources Forestry Division

Strategy Type



Timeframe



Priority



SA-2B: Ensure wildland fire management plans and/or hazard mitigation plans address wildland urban interface areas within their boundaries.

Plans should include requirements on how to manage WUI areas to reduce wildland fire risks and protect human life and property, as well as maps that show WUI locations.

Responsible Party(ies)

- Camp Williams
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Utah Department of Natural Resources Forestry Division
- U.S. Forest Service

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

SA-2C: Establish procedures and processes to jointly plan and conduct wildland fire fuel load reduction operations, such as prescribed burns, vegetation thinning, and similar activities.

Jurisdictions should continue to involve Camp Williams in future updates of fire protection plans and should establish benchmarks for ensuring that plans are being executed. Through these plans, the city should include considerations for practicing cross-installation and cross-jurisdiction annual evacuation training.

Responsible Party(ies)

- Camp Williams
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Utah Department of Natural Resources Forestry Division
- U.S. Forest Service

Strategy Type



Timeframe



Priority



SA-2D: Conduct joint wildland fire training regularly to ensure readiness in advance of the annual fire season.

Stakeholders should coordinate joint fire suppression training and exercises.

Camp Williams should continue to work with the Unified Fire Agency (UFA) and local fire protection agencies/departments to conduct joint training exercises at Camp Williams.

Responsible Party(ies)

- Camp Williams
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Utah Department of Natural Resources Forestry Division
- U.S. Forest Service
- Unified Fire Agency

Strategy Type



Timeframe



Priority



West Traverse Mountain Compatibility Area Study

SA-2E: Implement wildland fire ordinances that include requirements such as defensible space zones around buildings.

The National Fire Protection Association's 2013 Community Wildfire Safety Through Regulation guide provides best practices for fire protection in WUI areas and can be used to develop local wildland fire guidance and regulations.

Strategy Type



Timeframe



Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams
- MAG
- Unified Fire Agency

Priority



SA-2F: Collaborate with Utah Department of Natural Resources Forestry Division and the U.S. Forest Service to identify actions and funding opportunities under the new USDA/USFS January 2022 Wildfire Crisis Implementation Plan.

High risk fire sheds, including several located in north central Utah, have been identified as potential treatment areas to reduce risk of wildland fires. Jurisdictions and the Utah Department of Natural Resources Forestry Division should collaborate to identify actions and funding opportunities for addressing this issue. Consider partnership for pursuing BRIC or USDA federal grant funding opportunities.

Responsible Party(ies)

- Camp Williams
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Utah Department of Natural Resources Forestry Division
- U.S. Forest Service

Strategy Type



Timeframe



Priority



West Traverse Mountain Compatibility Area Study

SA-2G: Foster interagency fire suppression training. Leverage local jurisdiction, UDNR/FFSL, Unified Fire Authority (UFA), and federal resources to conduct fire suppression and training exercises with Camp Williams' firefighters.

Camp Williams should continue to work with state agencies and local fire protection agencies/departments to conduct joint training exercises at Camp Williams. Coordinated wildfire training with Camp Williams should continue as part of its overall unified fire response strategy.

Responsible Party(ies)

- Camp Williams

Partner(s)

- Local jurisdictions
- DNR/FFSL
- UFA
- Utah Department of Natural Resources Forestry Division
- U.S. Forest Service

Strategy Type



Timeframe



Priority



SA-2H: Jointly develop a fire management awareness program for the general public.

Leverage federal and local resources to develop fire management awareness brochures and other tools to inform the public on how to recognize the beginning of a fire and what steps to take to alert the appropriate authorities. Work with local TV stations to air special segments on fire awareness and management during wildland fire season.

This strategy can be combined with other recommended public awareness strategies.

Responsible Party(ies)

- Camp Williams
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Local media

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

SA-2I: Implement best management practices for fuel load and vegetation management in wildland urban interface (WUI) areas.

Use fire-resistant plants, such as rock rose, in targeted landscapes, as recommended by Utah State University Cooperative Extension.

Installations, local governments, and fire agencies should continue to coordinate and collaborate on fuel load management, using herd grazing and prescribed burn techniques, within critical management areas where wildland fire threatens homes and communities with a particular emphasis on wildland urban interface (WUI) areas.

Responsible Party(ies)

- Camp Williams
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Unified Fire Agency
- BLM
- Utah State University
- Utah DNR

Strategy Type



Timeframe



Priority



SA-3: Military traffic on public highways creates impacts.

Military units travel between Camp Williams and Dugway Proving Ground on high-traffic civilian roadways, such as SR-75, which can increase congestion and present safety risks.

Recommended Strategy

SA-3A: Reduce the convergence of military and civilian traffic.

To the extent possible, UTARNG should consider scheduling convoys to avoid peak hours of civilian traffic along SR-73 and other public roadways.

Responsible Party(ies)

■ UTARNG

Partner(s)

■

Priority



Strategy Type



Timeframe





West Traverse Mountain Compatibility Area Study

SA-3B: Relocate Camp Williams main entrance from Redwood Drive to 2700 North (South Gate).

See RC-1.

Responsible Party(ies)

- UTARNG

Partner(s)

- UDOT
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs

Strategy Type



Timeframe



Priority



SA-3C: Allow for review of transportation plans and expansions by Camp Williams.

Establish an MOU that invites a Camp Williams representative to participate as a stakeholder to enable military comment and feedback on pertinent transportation plans and expansions.

Responsible Party(ies)

- Camp Williams
- UDOT
- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)



Strategy Type



Timeframe



Priority





Water Quality/Quantity (WQQ) Issues

WQQ-1: Limited water availability down range at Camp Williams has the potential to impact training operations.

Potable water system distribution at Camp Williams is limited to the cantonment area. The Range Maintenance Facility and other down-range portions of the installation currently rely on a separate water connection.

Recommended Strategy

WQQ-1A: Consider establishing new on-installation potable water capacity (groundwater wells) to serve down-range locations, and range maintenance area facilities.

Camp Williams should collaborate with the Utah Division of Water Resources to establish a new sustainable potable on-installation potable water source and also serve to provide emergency water supplies supporting wildland fire response.

Responsible Party(ies)

- Camp Williams

Partner(s)

- Utah Division of Water Resources

Strategy Type



Timeframe



Priority



WQQ-2: Increased development in the vicinity of Camp Williams is causing concerns regarding the resiliency of water supply sources.

Camp Williams obtains its water supply from springs, surface waters, and groundwater sources. As development continues to grow around the installation, particularly to the north and east, impacts to water sources have the potential to degrade the quality and reduce the available quantity of water for Camp Williams.

Recommended Strategy

WQQ-2A: Develop information to inform the public about the long-term water capacity of the regional aquifer.

WQQ-1B: The CAS should prepare or update information to inform the public about the long-term water capacity efforts to reduce installation water demand and use.

Utah and the West Traverse region continue to be affected by an ongoing drought that has the potential to impact potable water supplies throughout the region. A combination of reduced supplies and increased demand for water in the region may create the potential for water shortages in the near to mid-term. Local communities should partner to prepare/update information to inform the public about the long-term water capacity that will help reduce the current water demands from Camp Williams water sources.

This strategy can be combined with other recommended public awareness strategies.

Responsible Party(ies)

- Camp Williams Partnership Committee CAS Implementation Working Group

Partner(s)

- Utah Department of Natural Resources

Strategy Type



Timeframe



Priority





West Traverse Mountain Compatibility Area Study

WQQ-2B: Work with Counties and the State to increase awareness of and focus on water supply protection requirements. Ensure developers are held accountable for impacts to water supply protection areas.

Camp Williams and the surrounding communities continue to be affected by an ongoing development that coupled with drought has the potential to impact potable water sources. Local jurisdictions should inform the public and developers about water supply protection, which includes the reduction of pollutants in stormwater runoff to reduce impacts to local waterways.

Strategy Type



Timeframe



Responsible Party(ies)

- Salt Lake County
- Utah County
- Herriman City
- Bluffdale City
- Lehi City
- City of Saratoga Springs
- Eagle Mountain
- Town of Cedar Fort

Partner(s)

- Camp Williams

Priority



WQQ-3: Stormwater flow in Tickville Gulch impacts riparian habitat on the installation and has the potential to affect land off the installation.

Tickville Gulch drains from Camp Williams to the south towards Eagle Mountain, eventually leading to Utah Lake. The channel is heavily incised and impacted by stormwater flows and associated erosion. There is the potential for sediment transport off the installation.

Recommended Strategy

WQQ-3A: Implement INRMP objective VE8, Project 23 (Install Beaver-Dam-Analogs at Tickville Gulch) and Project 43 (Analysis and Planning for Improving the Erosion Control in Tickville Watershed).

Camp Williams should construct/implement INRMP objective VE8, project 23 fund and if necessary, seek state or federal grant funding opportunities in partnership with local communities.

Strategy Type



Timeframe



Responsible Party(ies)

- Camp Williams

Partner(s)

- Eagle Mountain
- Saratoga Springs

Priority



WQQ-3B: Coordinate efforts to address any off-installation stormwater, erosion, and sediment impacts from Tickville Gulch.

Camp Williams should evaluate existing stormwater outfall infrastructure, erosion and sediment impacts from the installation and Tickville Gulch and determine if existing infrastructure is adequate for stormwater flows. Work with the Eagle Mountain community to determine issues.

Strategy Type



Timeframe



Responsible Party(ies)

- Camp Williams

Partner(s)

- Eagle Mountain
- Saratoga Springs

Priority





West Traverse Mountain Compatibility Area Study

WQQ-3C: Continue to monitor cattle trespass in Tickville Gulch to reduce trampling of riparian habitat.

The INRMP notes that with re-initiation of cattle grazing to reduce fire loads, cattle occasionally enter riparian areas. Consider using alternate species herd grazing.

Strategy Type



Timeframe



Responsible Party(ies)

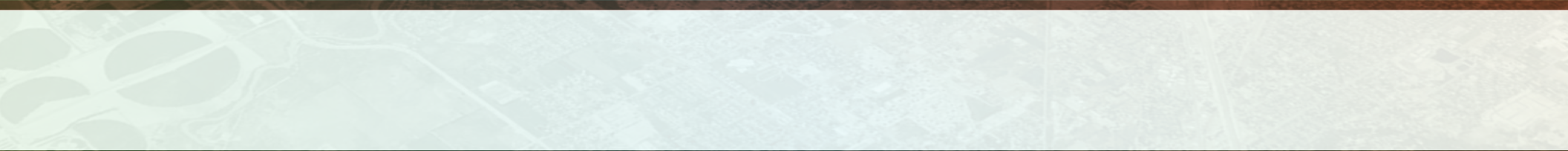
- Camp Williams

Partner(s)

- Cattle ranchers
- Sheep and goat ranchers

Priority







M A G

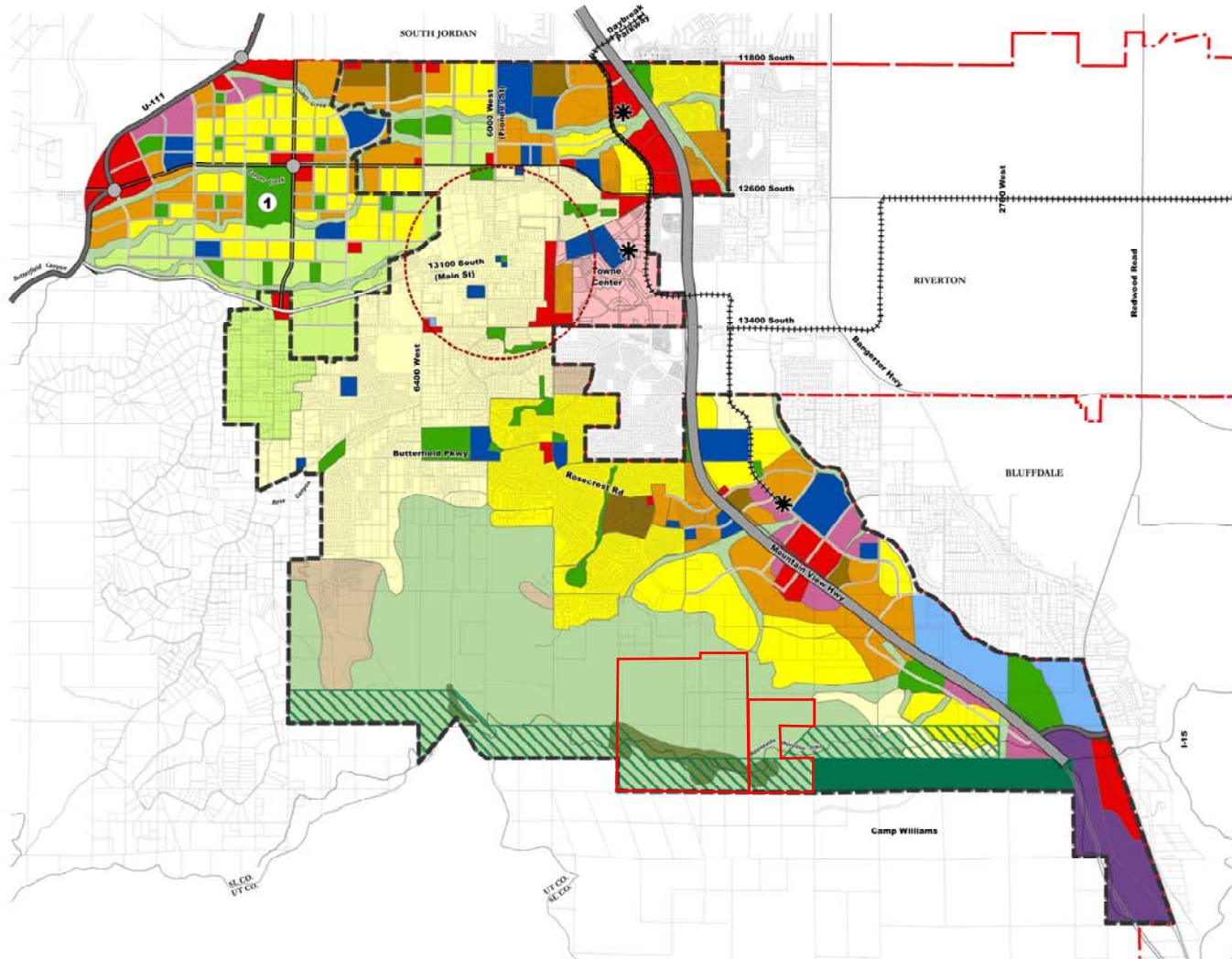
Expert Resources. Enriching Lives.



Matrix

Attachment F

General Plan Documents



Future Land Use 2025 Modified

- Hillside/ Rural Residential (0.5 - 1.7 du/acre)
- Agricultural Residential (1.8 - 3.0 du/acre)
- Low Density Residential (1.8 - 2.5 du/acre)
- Single Family Residential (2.6 - 4.5 du/acre)
- Medium Density Residential (4.6 - 8 du/acre)
- High Density Residential (8 - 20 du/acre)
- Mixed Use
- Mixed Use - Towne Center
- Commercial
- Light Industrial Park/ Business Park
- Public/ Institutional/ Cultural/ Schools
- Quasi-Public/ Utilities
- Military Operational
- Resort/ Recreational
- Open Space
- Parks and Recreation
- Northwest Regional Park
- Herriman City Boundary
- Municipal Boundaries
- Military Compatibility Overlay
- Light Rail
- Transit Station
- Roundabout
- Historic District Conservation Zone
(final boundary to be determined by special committee)

HERRIMAN
GENERAL PLAN
AMENDMENT

0 0.25 0.5 1 Miles

ADOPTED
July, 2014

HERRIMAN
CITY

Print Date: 12/8/2014

according to Herriman City standards as part of the development approval process.

Goals: Community recreation facilities, such as parks, recreation centers and trail corridors.

Areas which may be developed in the future shall be zoned otherwise to be forthright about their potential future use.

14. Open Space

Supply: Approximately 3577 acres, 27.1% of the 2025 Plan Area

Use: Natural open space, hillsides, trails and resource protection areas. Envisioned amenities include parks; multi-purpose trails for pedestrians, cyclists, ATV users and horses; cultural/recreation centers; gun ranges; etc.

Goals: Protection of environmentally sensitive areas.

Permanently protected open space for both natural purposes and active recreation uses.

Greenway corridors for preserving natural features and allowing trail connections.

Permanent protection, public ownership and public access.

15. Resort/Recreational (maximum 0.4 du/acre)

Supply: Approximately 154 acres, 1.2% of 2025 Plan Area

Use: Destination facilities and venues that encourage use by tourists and visitors from outside the city.

Goals: Take advantage of the unique setting, while being sensitive to access limitations, view sheds, wildlife, recreation potential, and steep slopes.

Encourage flexible and creative development in order to offer a unique experience in a high-quality, visitor friendly setting.

Design should promote and enhance usable open spaces, recreation areas, and pedestrian walkability.

Projects should be designed with a consistent theme and appearance.

The area's unique and sensitive environment should be planned for uses that take advantage of natural assets for public use, recreational potential and still respect site constraints such as limited access, close proximity to Camp Williams, and protection of sensitive and scenic landscapes.

16. Military Operation (Camp Williams)

Herriman City borders Camp Williams, a military facility owned and managed by the United States Department of Defense and currently operated by the Utah Army National Guard. Herriman City supports ongoing operations of this important military base.

Herriman City intends to cooperate with Camp Williams in managing their border and supporting compatible uses along this border. Herriman City also intends to protect the safety and welfare of residents and the general public by supporting an appropriate buffer and safety measures for lands within this area.

Activities here include, but are not limited to, the training of military personnel in combat, emergency response and other military operations; weapons deployment; helicopter, tank and large machinery operation; and other activities as determined by the Department of Defense. Activities may have adverse impacts including, but not limited to: excess noise, light, and dust. In 2011 Herriman joined other communities in the region to create a Joint Land Use Study (JLUS), which was completed in January of 2013. The Camp Williams JLUS analyzed the existing tools in each jurisdiction's planning toolbox and developed strategies to assist the municipalities and Camp Williams by incorporating compatibility planning best practices in the JLUS implementation plan. Jurisdictional general plans and zoning ordinances were reviewed, base plans were assessed for compatibility with joint land uses to preserve the Camp Williams mission and enhance the vision of the jurisdictions. Through this compatibility assessment, issues were identified by the JLUS organization, committees, and various stakeholders.

These issues were based on the 22 common compatibility factors that can affect both the military mission and the adjacent and proximate community land uses. The JLUS issues were then prioritized and ranked based on input received about the relative issue that presented the greatest impact for the jurisdictions as well as a timeframe to implement the strategy. These factors have been evaluated and this Plan incorporates goals, objectives,

policies and strategies deemed necessary to sufficiently address applicable compatibility issues.

Special Districts and Sites

a. Herriman TRAX Station/Transit-Oriented Development (TOD) District

An extension of the South Jordan light rail alignment is proposed on the northeast edge of the community. A conceptual alignment has been proposed, entering Herriman just west of the Mountain View corridor at Daybreak Parkway, continuing south through Towne Center, and exiting the city at approximately 13250 South into Riverton and areas further east and south. A TRAX station is proposed near the northeast portion of the Towne Center area which is envisioned for mixed-use and commercial development. This station area should be designed and developed as a **transit-oriented development (TOD)**, incorporating mixed-use residential and commercial uses in a manner that maximize access to light rail and other transit options, and incorporating other features to encourage transit ridership. TOD neighborhoods are intended to merge light rail station with relatively high-density development, which becomes progressively lower-density development as it spreads outward from the center. TODs generally are located within a radius of one-quarter to one-half from the station, which is considered to be an appropriate scale for walking and pedestrian movement.

b. Historic Herriman Conservation District

Some of the most indelible images of Herriman are found in "Old Herriman", also known as the Herriman Original Settlement Area (see Figure 3-24). The remnant agricultural fields and older residential structures, in combination with the orthogonal street grid, traditional development pattern, mature trees, drainage

Goal: To support the continued viability of Camp Williams through the reduction, elimination or mitigation of present and/or future compatibility issues.

Implementation Measure: Adopt and administer a “Military Activities (overlay) Zone” and regulation consistent with the overlay extent recommended in the Camp Williams JLUS Report.

Implementation Measure: Support efforts to enhance market awareness of the Camp and potential compatibility issues through timely and consistent disclosure to potential buyers or lessors of real property within the MAZ overlay area, including but not necessarily limited to, notations on approved development plats/site plans prior to their being recorded.

Goal: To maintain critical open spaces, habitat areas and natural features.

Policy: Regulate future development on steep hillsides, water ways and open land.

Implementation Measure: Ensure that environmental protection is adequately addressed in the development review process.

Implementation Measure: Enforce ordinances requiring development setbacks along creek corridors and drainages. The recommended setbacks are 100 feet along major waterways and creeks, and 50 feet along smaller tributaries, canals and drainages.

Implementation Measure: Work closely with the U.S. Army Corps of Engineers and other responsible agencies to ensure that any wetlands within the City are protected and maintained.

Implementation Measure: Work with Salt Lake County and the State of Utah to ensure that city, county and state statutes are consistent.

Goal: To conserve water on public and private landscapes.

Policy: Encourage water conservation through policies and ordinances that reduce indoor and outdoor water use.

Implementation Measure: Adopt a water conservation landscape ordinance.

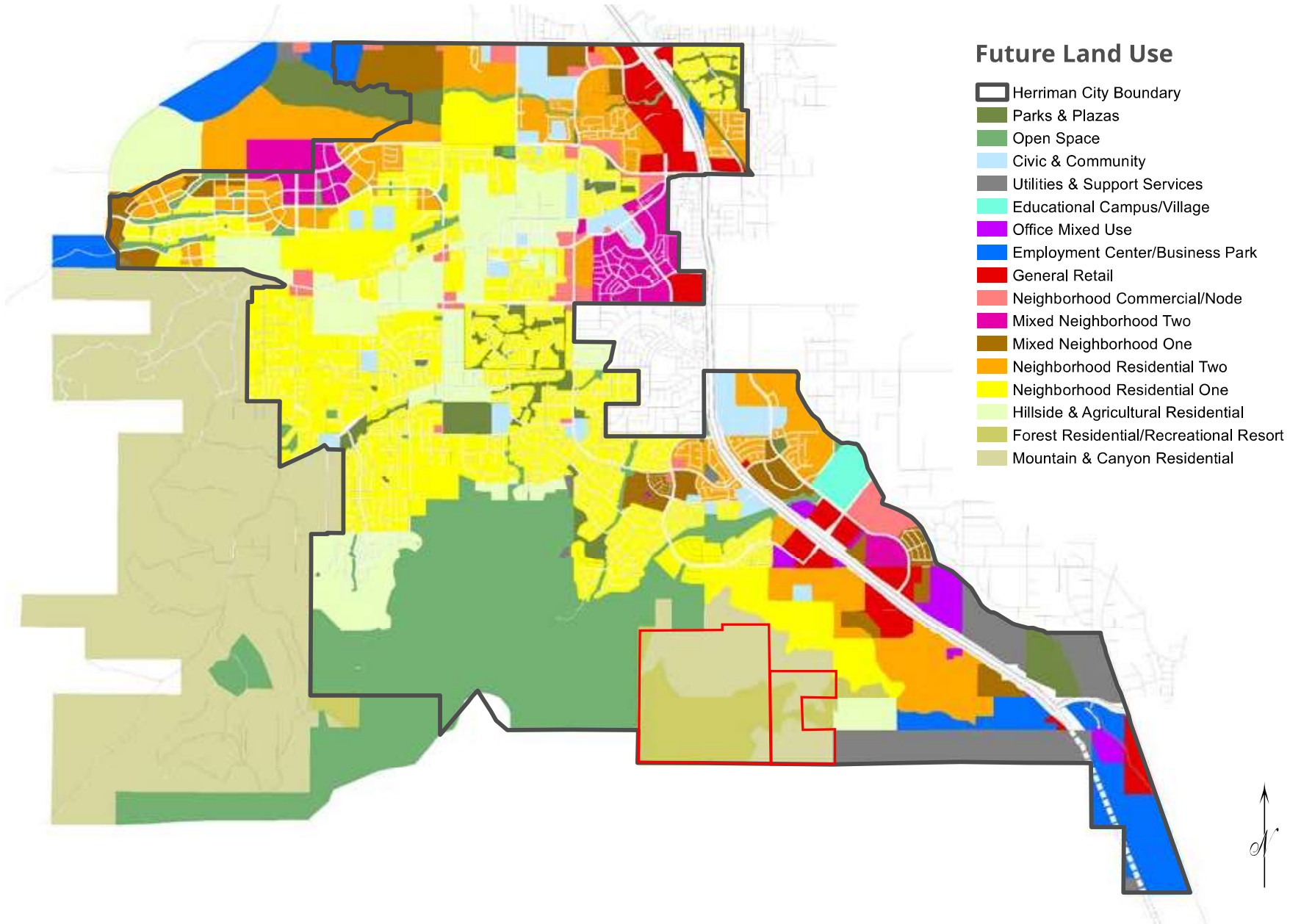
Implementation Measure: Utilize water conserving landscape design and methods on public projects to serve as examples for private development.

Implementation Measure: Adopt an indoor water use ordinance that requires low flow plumbing fixtures and similar practices that conserve water use.

Goal: To maintain the positive design standards and unified appearance of existing commercial uses, and to extend these into future commercial developments.

Policy: Maintain and strengthen existing commercial design standards.

Goal: To extend the positive design and unified appearance of commercial uses to other uses in the city.



Attachment G
Community Meeting Notice

NOTICE OF COMMUNITY MEETING

February 23, 2023

Re: Laguna/Malibu MDA

My name is John Lindsley, and I am applying for a Large Project Master Planned Community (LMPC) on properties located at approximately 4461 W Juniper Crest Road and 15750 S Mountain View Corridor Highway. The properties combined total approximately 826 acres in size. The current zoning of the subject properties is FR 2.5 (Forestry Recreational, 2.5 acre minimum) Zone.

A community meeting regarding this proposal will be held on March 6, 2023, at 6:00 p.m. at Herriman City Hall (5355 W Herriman Main St). During this meeting I, the applicant, will present a brief overview of the proposed project. Afterward, questions and comments will be addressed.

Included with this notice is a vicinity map of the property.

If you are unable to attend, but would like to submit a question, please send an email to communityoutreach@herriman.org within 48 hours of the meeting.

Should you desire further information, you may contact:

John Lindsley (Applicant) – john@ivdevpartners.com
(information regarding the project)

Sandra Llewellyn (Community Outreach Coordinator) sllewellyn@herriman.org
(information regarding the application process or city code requirements)

THE PUBLIC IS ENCOURAGED TO ATTEND

Community Outreach Neighborhood Meeting

Project:

SIGN IN SHEET

TIME:

Date:

Name:

Email address:

1	Steve + Cindy Slessinger	
2	Kenese Jackson	
3	Justin Roberts	
4	Tylor Gray	
5	Steve Raguskus	
6	Inga Smith	
7	Kathy Smith	
8	Eric Lamoreaux	
9	VAUGHN EVANS	
10	ASHLEY BLAIR	a.mixon.80@gmail.com
11	ADAM BLAIR	adamblair@gmail.com
12	DAVID ROCHESTER	
13	ROBYN ROCHESTER	
14	MEAGAN PAYNE	
15	BRAYDEN DENT	
16	KELSEY DENT	
17	JAREN DAY	
18	JAMES DERRAN	
19	PAUL DAHL	
20	BRANDON DETTMERS	
21	DREA DETTMERS	
22	Richard Rivers	richarddanielrivers@gmail.com
23	ERIC PRINCE	ERIC.PRINCE74@GMAIL.COM
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Attachment H

Public Notice



Planning Commission Meeting

April 5, 2023

Time: 7pm

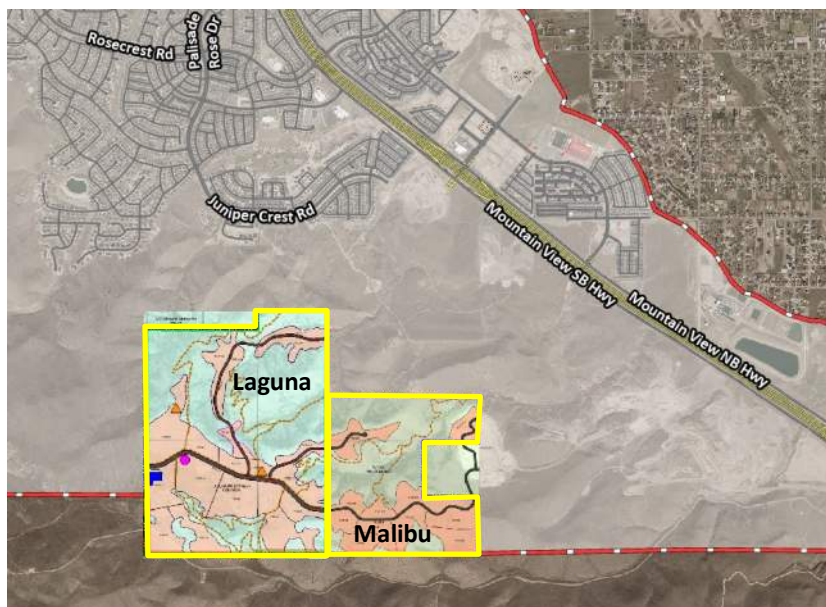
Place: 5355 W Herriman Main St.

Please Contact Herriman City Planning
With Questions/ Concerns At:
planning@herriman.org
OR
801-446-5323



PUBLIC NOTICE

You are encouraged to attend a Public Hearing regarding a request that has been made by John Lindsley for a Zoning Map Amendment consideration to apply the Large Master Plan Community zone to \pm 815 acres known as Laguna/ Malibu ("The Preserve") at 4461 W Juniper Crest Road in the FR-2.5 Zone (Forest Recreation).



Scan the QR Code or go to www.herriman.org/Public-Notices for more plat information

Staff Reports available at <https://www.herriman.org/pc-agendas-minutes> on 3/31/2023