NATURAL RESOURCES ANALYSIS/WILDLIFE HABITAT ASSESSMENT

PROPOSED WALIPINI SUBDIVISION

DICKEY PROPERTY (PARCEL RP03N46E198100), TETON COUNTY, IDAHO

Prepared For

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NATURAL RESOURCES ANALYSIS/WILDLIFE HABITAT ASSESSMENT

PROPOSED WALIPINI SUBDIVISION

DICKEY PROPERTY (PARCEL RP03N46E198100), TETON COUNTY, IDAHO

INTRODUCTION AND BACKGROUND

Biota Research and Consulting, Inc. prepared a Natural Resources Analysis (NRA) for the proposed Walipini Subdivision in Teton County, Idaho. Information provided in this NRA is necessary to assess the possible adverse effects of proposed development on natural resources and to ensure compliance with Title 9 of the Teton County, Idaho Code. This analysis was required by Teton County because the property is located within the Wildlife Habitat (WH) Overlay for big game seasonal range and migration corridors. The project area is comprised of an 8-acre tract owned by Bradley Dickey (RP03N46E198100).

Existing development within the project area consists of a residential structure and associated driveway and parking area; an outbuilding, a section of the Old Jackson Highway along with its easement; a section of unimproved driveway in the southwestern portion; an irrigation ditch; and several perimeter fences. Fieldwork associated with the NRA was conducted in August and September 2019, with efforts focused on determining vegetative covertypes and identifying indicator habitat and wildlife use patterns.

PROJECT SUMMARY

Proposed development plans consist of a 3-lot subdivision. The existing development is included within the 2.5-acre Lot 1. Lots 2 and 3 will be 3 acres and 2.5 acres in size, respectively. Lots 2 and 3 encompass a portion of the property that is presently largely undeveloped. Proposed development plans include a realignment and upgrading of the existing driveway (to be called Walipini Lane) to meet county specifications and provide access to Lots 2 and 3.

LOCATION AND PHYSIOGRAPHY

The project area is located southeast of the town of Victor in Teton County, Idaho (T3N, R46E, Section 19; Appendix 1-Exhibits 1 and 2). The project area is surrounded by privately-owned lands. Access to the property is gained by traveling south from Victor on ID-33 for 3.5 miles, then then left on the connector road and left on Old Jackson Highway for 0.4 miles.

The project area is situated on an elevated, gently-sloping terrace between the foothills of the southern end of the Teton Range and the valley bottom. Elevations within the project area generally range from about 6,520 to 6,560 feet, and the drainage pattern is primarily east to west.

EXISTING CONDITIONS INVENTORY

Per Title 9 of the Teton County Code, the NRA shall include a description of existing conditions on the application parcel. Photographic documentation of existing conditions is presented in Appendix 2.

WATERCOURSES, FLOODPLAINS, WETLANDS, AND RIPARIAN AREAS

No watercourses, floodplains, wetlands, or riparian areas are present within the project area.

GEOLOGIC OR SEISMIC HAZARDS

Seismic maps produced by the Idaho Geological Survey in 2011 depict National Earthquake Hazards Reduction Program (NEHRP) seismic classes for Teton County. According to this mapping, the western portion of the project area is classified as Class 1 and the remainder of the project area is unclassified and situated between areas classified as Class 1 and Class 3 (Appendix 1-Exhibit 3). These classifications suggest that the project area is located in an area of relatively high shear-wave velocity, which would likely result in lower shaking intensity during a seismic event, and indicates it is a fairly low risk area.

WILDFIRE DANGER

The Title 9 Code refers to the "latest adopted plan of the Teton County Fire Protection District" for a determination of whether there are areas of the project area that are in designated "high" or "extreme" wildfire danger. The county-wide scale of the fire behavior maps included in the most recent (2016) Wildfire Protection Plan (CWPP) makes it difficult to discern individual parcels, but it appears that the project area is not in a designated "high" or "extreme" wildfire danger zone. No CWPP GIS data for the county are available, nor is a higher resolution zoomed-in view of the parcel in relation to the CWPP mapping.

In addition to the CWPP information, Wildland Urban Interface (WUI) mapping was acquired from the Teton County GIS Department. The WUI is generally defined as those areas where homes are built near or among lands prone to wildland fire. The local WUI mapping was developed by the Caribou-Targhee National Forest and depicts the project area as within the WUI zone (Appendix 1-Exhibit 4).

Although it appears that the CWPP mapping doesn't depict high or extreme wildfire danger within the project area, the forested areas are dominated by flammable shrubs and trees. It is advisable that the applicant creates defensible space around any flammable structures constructed in or adjacent to the forested areas to limit the amount of flammable vegetation and materials surrounding the structures and implement other best management practices for development in fire-prone areas. The National Fire Protection Association provides several resources (http://www.firewise.org/wildfire-preparedness/be-firewise/home-and-landscape.aspx).

VEGETATION

The majority (5.1 acres, 63.9%) of the project area is comprised of non-irrigated, fallow agricultural meadow dominated by introduced grasses (4.96 acres) and fallow agricultural meadow that is naturally converting into a mountain sagebrush dominated covertype (0.14 acres) [Appendix 1-Exhibit 5, Table 1]. The mountain shrubland community (Quaking aspen/Serviceberry-mountain snowberry/mountain brome association), is the second most common habitat type (1.76 acres, 22%). The remainder of the tract is comprised of existing disturbed areas consisting of roads, buildings, and other disturbed areas (1.12 acres, 14.1%).

The plant association referenced in this report has been adapted from *A Field Manual for Classified Vegetation in the Upper Snake River Valley* (Merigliano 2009) and is described below.

Quaking Aspen/Serviceberry-Mountain Snowberry/Mountain Brome

The mountain shrublands habitat type within the project area is represented by the quaking aspen/serviceberry-mountain snowberry/mountain brome (*Populus tremuloides Amelanchier alnifolia-Symphoricarpos oreophilus/Bromus carinatus)* association. This association occurs along the relic irrigation ditch and in the western portion of the project area and is dominated by medium and mature quaking aspen in the overstory with Saskatoon serviceberry, mountain snowberry, and woods rose

dominating the shrub layer. The herbaceous understory is dominated by mountain brome, bluegrass, common timothy, and other species.

Table 1. Surface areas and indicator habitat status of vegetation associations within the Walipini Subdivision project area, Teton County, Idaho.

Habitat Type	Association	Acres	Sq Ft	Percentage	Indicator Habitat
Mountain Shrublands - Non-Mesic Aspen/Tall Shrub	Quaking aspen/serviceberry-mountain snowberry/mountain brome	1.76	76,673	22.0	Yes
Agricultural Meadow/Sagebrush (recovering pasture)		0.14	6,189	1.8	No
Agricultural Meadow (fallow, non-irrigated)		4.96	216,051	62.1	No
Disturbed		1.12	48,931	14.1	No
	Totals	**7.99**	**347,844**	**100**	

RIDGES AND ROCK OUTCROPPINGS

No ridges or rock outcroppings occur in the project area.

PROXIMITY TO STATE HIGHWAYS OR SKI HILL ROAD

State Highway 33 comes within 300 feet of the western property boundary, but views of the project area from the highway are mostly obscured by vegetation, residences and topography between the highway and the project area (Appendix 1-Exhibit 6). The project area is not proximate to or visible from Ski Hill Road.

WILDLIFE HABITAT ASSESSMENT

The project area lies entirely within the Teton County Wildlife Habitat Overlay for big game migration corridors and seasonal range (Appendix 1-Exhibit 7) and, therefore, is subject to the Title 9 Wildlife Overlay regulations. The WH Overlay regulations require that the Natural Resources Analysis include the following documentation:

- Wildlife Habitat Assessment;
- Impact Analysis;
- Mitigation Plan; and
- Land Management Plan.

In addition, the following maps are also required:

- Big game winter range on or within 1 mile of the proposed subdivision;
- Information pertinent to the Wildlife Habitat Assessment;
- Proposed impacts to wildlife or indicator habitat; and
- Proposed mitigation treatment areas and treatment measures.

Per the Title 9 WH Overlay regulations, this wildlife habitat assessment is focused on the indicator species for habitat depicted on the WH Overlay map for the application parcel as well as indicator habitats for these species. The indicator species for mapped big game migration corridors and seasonal range are elk and mule deer.

KEY HABITAT TYPES

The majority (64%) of the project area is vegetated in covertypes that are largely variations of pastureland and these covertypes are not indicator habitat for wildlife indicator species. The indicator habitat for big game migration corridors and seasonal range, as defined in Title 9, is mountain shrublands.

Mountain Shrublands

Mountain shrublands are defined in Title 9 as "*Shrublands dominated by serviceberry, chokecherry, sagebrush, bitterbrush, snowberry and/or other native mountain shrub species*." Approximately 22% of the project area is comprised of a non-mesic aspen/tall shrub habitat type (*Quaking aspen/serviceberry-mountain snowberry/mountain brome* association). This association is described in the vegetation section of this report. While the aspen tall shrub covertype does not specifically meet the Title 9 definition of "mountain shrublands" it does meet the functional definition of that indicator habitat. On a relative scale, the tall shrub-aspen association represents the highest value habitat for wildlife in general and ungulates in particular within the project area, and therefore is considered an indicator habitat.

The aspen/tall shrub habitat occurs along the relic irrigation ditch and proximate to the existing residence in the western portion of the project area. This community has a dense understory of serviceberry, snowberry, woods rose, and other species that together provide high quality thermal and hiding cover for elk and mule deer. This habitat, however, likely only sees occasional use on a year-round basis by these species due to the proximity of existing development and associated human and pet presence.

WILDLIFE INVENTORY

Big Game

The Moose Creek, Mike Harris Creek, and Trail Creek drainages serve as movement corridors for a diversity of wildlife including big game indicator species (mule deer and elk). The project area is situated near these corridors and likely serves as transient habitat for these species. The project area is also situated between Trail Creek and the foothills to the east, and the band of mountain shrublands (aspen/tall shrub) habitat within the project area likely provides cover for movement of elk and/or mule deer between these habitats.

To investigate elk and mule deer use and movement patterns, Biota performed field investigations and consulted with IDFG regarding any existing data or knowledge of use/movement of these species in and around the project area. Evidence of elk and mule deer use (i.e., pellet groups, bedding sites, tracks, rubs, and evidence of browsing) was observed in the aspen/tall shrub portion of the project area, confirming that this portion of the project area provides habitat for these species. The remaining portion of the project area is comprised of pasturelands and disturbed areas that provide minimal wildlife habitat due to the species composition, forage palatability, presence of noxious weeds, lack of structural complexity and cover, and the historic land uses and land modifications that resulted in the conversion of native vegetation in these areas.

In regard to movement patterns, IDFG confirmed that the only elk or mule deer tracking studies or data they are aware of in the vicinity of the project area are two current GPS-based tracking studies they are working on. One study is in partnership with the Wyoming Game and Fish Department and University of California Davis and is investigating the movements and migration patterns of the Targhee Elk Heard, including elk use of the habitat east of Victor. The study is ongoing, and data have yet to be analyzed and summarized. According to IDFG, preliminary data from the elk collared east of Victor indicate that elk overwinter in the mountain shrublands east of Victor in some years and migrate to areas with more accessible habitat (i.e., shallower snowpack) such as along the South Fork Snake River in Swan Valley in some years.

The second study is in partnership with Grand Teton National Park (GTNP) and is focused on mule deer movement through Teton Canyon. This study is part of a larger GPS-tracking study initiated by GTNP in 2013 to investigate migration routes of mule deer that summer in the Park. The study is ongoing, and no data have been collected on deer in the vicinity of the Walipini Subdivision project area to date. Although, elk and mule deer occasionally utilize available habitat within the project area, the value of this habitat is diminished due to the proximity of existing development and associated human and pet presence.

THREATENED AND ENDANGERED SPECIES

A report generated by the U.S. Fish and Wildlife Service's (USFWS) Information, Planning, and Conservation (IPaC) System for the property identified two species listed as threatened (grizzly bear and Canada lynx), one proposed threatened species (North American wolverine), and one candidate species (whitebark pine) under the ESA that may occur in the vicinity of the subject property. Background research on the current status of these species in the region was performed, and several site investigations were conducted in fall 2019 to investigate habitat potential.

Grizzly Bear

Grizzly bears currently inhabit much of the Greater Yellowstone Ecosystem (GYE), including portions of Yellowstone National Park, Grand Teton National Park, and Bridger-Teton, Shoshone, Caribou-Targhee, Gallatin, and Custer National Forests, but at a relatively low density. Grizzly bears were originally listed as threatened under the ESA in the lower 48 states in 1975. The GYE Distinct Population Segment (DPS) of grizzly bears was briefly delisted by the USFWS in 2017 and then relisted in September 2018 due to a federal court decision. The most suitable habitat for grizzly bears in the GYE occurs in areas with large tracts of undisturbed habitat and minimal human presence. The core population of grizzly bears in the region is centered in Yellowstone National Park, but they have expanded their range in recent years and are known to travel from Yellowstone and Grand Teton National Park to areas south. Historic observations confirm that the project area is within grizzly bear habitat. Extensive home ranges of Yellowstone grizzly bears (more than 100 mi^2) and the availability of prey such as deer, elk, and moose in the vicinity of the project area, suggests that bears may occasionally be present in the vicinity of the project area; however, consistent use of the project area is not expected. Grizzly bear use of the project area would principally occur during dispersal or travel between areas of higher quality habitat. All available measures to minimize bear attraction, such as those outlined in the Idaho Yellowstone Grizzly Bear Management Plan (2002), should be implemented.

Canada Lynx

Canada lynx typically occupy cool and moist micro-climates found principally in high elevation mixed-conifer forests with dense, multi-layered under- and mid-story canopies. The elevation of the project area, proximity to human presence and lack of extensive late-seral coniferous forest precludes regular use of the property by lynx. Canada lynx are expected to use the property only with great rarity if at all, and any use would principally occur during dispersal or travel between areas of higher quality habitat.

North American Wolverine

Wolverines are rare and wide-ranging, occurring mainly in the high elevation, alpine areas. In February 2013, the distinct population segment of the North American wolverine occurring in the contiguous United States was proposed for listing as a threatened species under the ESA. Given their large ranges, wolverines can be found in a wide variety of habitats in these areas, particularly boreal conifer forests. Suitable habitat is defined by a combination of cold temperatures and reliable winter precipitation, where deep persistent snow at high elevations is available late into the spring and early summer. Home ranges of this species are notoriously large, and adult males generally cover the greatest distances. Adult male wolverines in the GYE generally have average home ranges in excess of 300 square miles. It is reasonable to assume that

the project area lies within one or more home ranges of wolverines, but due to lack of habitat and human presence in the vicinity of the project area, wolverines are not expected to use habitat within the project area.

Whitebark Pine

Whitebark pine (*Pinus albicaulis*) has been a candidate for listing under the ESA since 2011; however, listing has been precluded by the need to address other higher priority species. Whitebark pine occurs in subalpine and timberline zones, and no habitat for whitebark pine exists in the project area.

PROPOSED DEVELOPMENT

Proposed development plans include a 3-lot residential subdivision within a total site area of 8 acres. Existing development within the project area, including a driveway, residence, and outbuildings, will be incorporated within the proposed 2.5-acre Lot 1, and although a development area has been established no additional development is proposed within the Lot 1 building envelope. Lot 2 will be 3 acres in size and will include a building envelope that is approximately 36,000 sq ft in size. Lot 3 will be 2.5 acres in size and include an approximately 26,500 sq ft building envelope. The area where Lots 2 and 3 are proposed is currently largely undeveloped, and the associated building envelopes have been located entirely within the agricultural meadow and previously disturbed areas to minimize disturbance to indicator habitat. In addition to the 3 lots, proposed development plans include realigning, extending, and upgrading the existing driveway (to be called Walipini Lane) to provide access to the proposed lots and meet county specifications.

IMPACT ANALYSIS

Development of the subdivision will have both direct impacts via habitat loss and indirect impacts via increased human and domestic pet presence. Efforts were made by the applicant to develop site plans that minimize impacts to indicator habitat (i.e., mountain shrublands); however, some impacts to indicator habitat were deemed necessary in order to meet project objectives. Per project plans provided by Harmony Design and Engineering, the total limits of disturbance for the driveway and proposed building envelopes is 3.2 acres (40% of the site). Approximately 1 acre of this total is associated with the Lot 1 building envelope, where a residence currently exists. No additional disturbance within the Lot 1 building envelope is proposed. Proposed impacts (excluding those associated with the Lot 1 building envelope) total 2.16 acres (Table 2). The proposed access road and Lot 2 and 3 building envelopes will directly impact approximately 0.28 acres of mountain shrubland habitat and up to 1.61 acres of fallow agricultural meadow and 0.27 acres of previously disturbed area (Appendix 1-Exhibit 9). The building envelopes depicted on the site plans are quite large, and the project team does not expect all land within the building envelopes to be developed, so the impact numbers provided for the Lot 2 and 3 building envelopes should be considered conservative.

The extent of existing development and associated human and pet presence in and adjacent to the project area along with historic land uses and land modifications have diminished the habitat quality in the project area. Because of this and the fact that a concerted effort has been made to minimize direct project-related impacts to indicator habitat, the proposed development is likely to have minimal adverse impacts on indicator species. The only portion of the project area that represents meaningful habitat to ungulates is the area of mountain shrublands (aspen/tall shrub community), which surrounds existing residential development in the western portion of the project area and occurs along an historic and currently inactive irrigation ditch in the north-central and northeastern portions of the project area.

Table 2. Direct habitat impacts resulting from future development within the Walipini Subdivision project area, Teton County, Idaho.

Habitat Type	Driveway Impacts		Lot 2 and 3 Building Envelope Impacts		Total Impact	
	Acres	Sq Ft	Acres	Sq Ft	Acres	Sq Ft
Mountain Shrublands - Non-Mesic Aspen/Tall Shrub	0.28	12,135			0.28	12,135
Agricultural Meadow (fallow, non-irrigated)	0.19	8,348	1.42	61,767	1.61	70,115
Previously Disturbed	0.25	10,951	0.02	805	0.27	11,756
Totals	**0.72**	**31,434**	**1.44**	**62,572**	**2.16**	**94,006**

BIG GAME IMPACTS

Future development within the proposed subdivision will result in a direct loss of 0.28 acres of transient habitat for elk and mule deer as well as indirect impacts to these species via increased human and domestic pet presence. An assessment of consequences of the proposed development on big game indicator species is provided below. The assessment uses the following impact measure, duration, and intensity definitions.

Impact Measures - Four impact measures are examined including habitat loss, mortality, habitat fragmentation, and human-caused disturbance.

- Habitat Loss - Implementation and perpetuation of all or part of the project would result in a direct loss of habitat.
- Mortality - Implementation and perpetuation of all or part of the project would result in the death(s) of individuals.
- Habitat Fragmentation - Implementation and perpetuation of all or part of the project would result in the fragmentation of habitat.
- Human-caused Disturbance - Implementation and perpetuation of all or part of the project would result in the displacement of individual animals.

Duration of Impact - A short-term impact would have a duration less than or equal to 3 years and a long-term impact would have a duration greater than 3 years following implementation.

Intensity of Impact - Impact thresholds are defined in Table 3.

Impacts to Mule Deer

Proposed development is expected to reduce the availability of a small amount of spring-summer-fall foraging and cover habitat for mule deer and increase human and domestic pet activity in the area, which is likely to alter mule deer use. Deer movement in and around the project area appears to be dispersed with no evidence of primary, discrete, movement corridors. Movement patterns may be altered as a result of the proposed development; however, existing development in the vicinity is relatively sparse and porous, and mule deer are expected to adapt to the new development and associated use patterns. Efforts were made by the applicant to minimize impacts to indicator habitat; however, some impacts to indicator habitat (0.28 acres) were deemed necessary in order to meet project objectives. The proposed development is expected to have negligible adverse and long-term impact on mule deer; however, project impacts are not expected to have a measurable effect on the Teton Valley mule deer population.

Table 3. Impact threshold definitions for the development impact analysis, Walipini Subdivision project area, Teton County, Idaho.

Impact Threshold Definitions				
Measures	**Negligible**	**Minor**	**Moderate**	**Major**
Habitat Loss **Mortality** **Habitat Fragmentation** **Human-caused Disturbance**	A small number of individual animals and/or a small amount of their respective habitat may be adversely affected via direct or indirect impacts associated with a given alternative. Populations would not be affected or the effects would be below a measurable level of detection. Mitigation measures are typically not warranted.	Adverse impacts to individual animals and/or their respective habitats would be more numerous and detectable. Populations would not be affected or the effects would be below a measurable level of detection. Mitigation measures may be needed and would be successful in reducing adverse effects.	Effects to individual animals and their habitat would be readily detectable, with consequences occurring at a local population level. Mitigation measures would likely be needed to reduce adverse effects and would likely be successful.	Effects to individual animals and their habitat would be obvious and would have substantive consequences on a regional population level. Extensive mitigation measures would be needed to reduce any adverse effects and their success would not be guaranteed.

Impacts to Elk

Elk use occasionally use the forested mountain shrubland communities for cover and, to a lesser degree, for foraging. Proposed development will reduce the availability of a small amount of spring-summer-fall elk habitat and will likely negatively affect a few individual elk. Increased human and pet activity within the project area will likely alter elk use patterns, but elk movements to and from habitat located on the surrounding public lands is not expected to be disrupted. The proposed development is expected to have negligible adverse, long-term impacts on elk, but the project is not expected to have a measurable effect on the Teton Valley elk population.

MITIGATION AND LAND MANAGEMENT PLAN

Per guidance provided in Title 9, avoidance and minimization of impacts to indicator species and indicator habitat is the preferred approach to mitigate adverse impacts to these species. Efforts were made by the applicant to minimize impacts to indicator species and habitat; however, some impacts were deemed necessary in order to meet project objectives. In addition to minimization of impacts, the applicant has proposed the following measures to assist in mitigating project-related impacts to indicator species and habitat: habitat restoration/creation, noxious weed management, fence clean-up, and incorporating habitat protection mechanisms into the covenants, conditions, and restrictions (CCRs) for the neighborhood.

A 2,400 sq ft aspen/tall shrub habitat patch will be actively created in the western portion of Lot 2 by salvaging and transplanting topsoil and plant material from the impacted aspen/tall shrub areas as well as planting nursery-grown stock and seeding. The salvaged topsoil will contain plant propagules and a latent seedbank that will help to jumpstart the revegetation effort. The plant community in the constructed habitat feature will be designed to mimic the aspen/tall shrub community found onsite, with quaking aspen in the overstory and a diversity of shrubs in the understory including serviceberry, chokecherry, snowberry, Wood's rose, etc. This feature will increase available cover and visual screening for ungulates and provide additional songbird habitat.

Use restrictions and habitat protection mechanisms will be incorporated into the neighborhood CCRs to ensure that undeveloped portions of the neighborhood are preserved as wildlife habitat and domestic pets are restrained within yard fences to prevent them from chasing and harassing wildlife. All old, dilapidated fence materials (e.g., barbed wire) will be cleaned-up and removed to reduce the risk of wildlife entanglement and injury, and any new perimeter fencing will follow the wildlife-friendly fencing guidelines provided in Appendix 3.

The applicant will also initiate weed management efforts to control noxious weeds that currently exist in the project area. Weeds (e.g., Canada thistle) were observed within the project area during field investigations for this report (see Appendix 2-Photo 3), and a robust noxious weed management effort is planned. Weeds will be spot-sprayed with appropriate herbicides, and application will closely follow directions on manufacturer's labels to minimize non-target effects. Weed management efforts will be carried out on an as-needed basis to ensure that noxious weeds are controlled and prevent further weed encroachment into native plant communities.

All monitoring, management, and maintenance of open areas within the subdivision will be performed and funded by the applicant with the assistance of consultants such as Biota on an as-needed basis. Land management activities such as weed control will be carried out on an as-needed basis and will be performed in a manner that minimizes negative impacts to indicator species and habitat and avoids harm to natural resources.

SUMMARY AND CONCLUSION

The proposed Walipini Subdivision will result in the creation of 3 lots within the 8-acre project area. Development plans provided by Harmony Design and Engineering include enlargement and realignment of an existing driveway; maintaining existing development with Lot 1; and development of designated building envelopes for Lots 2 and 3. This NRA report has been prepared because the project area falls entirely within the WH Overlay for big game seasonal range and migration corridors. The proposed development will impact 0.28 acres of indicator habitat (i.e., mountain shrubland plant association) and will have negligible adverse long-term impacts on big game indicator species (i.e., mule deer and elk).

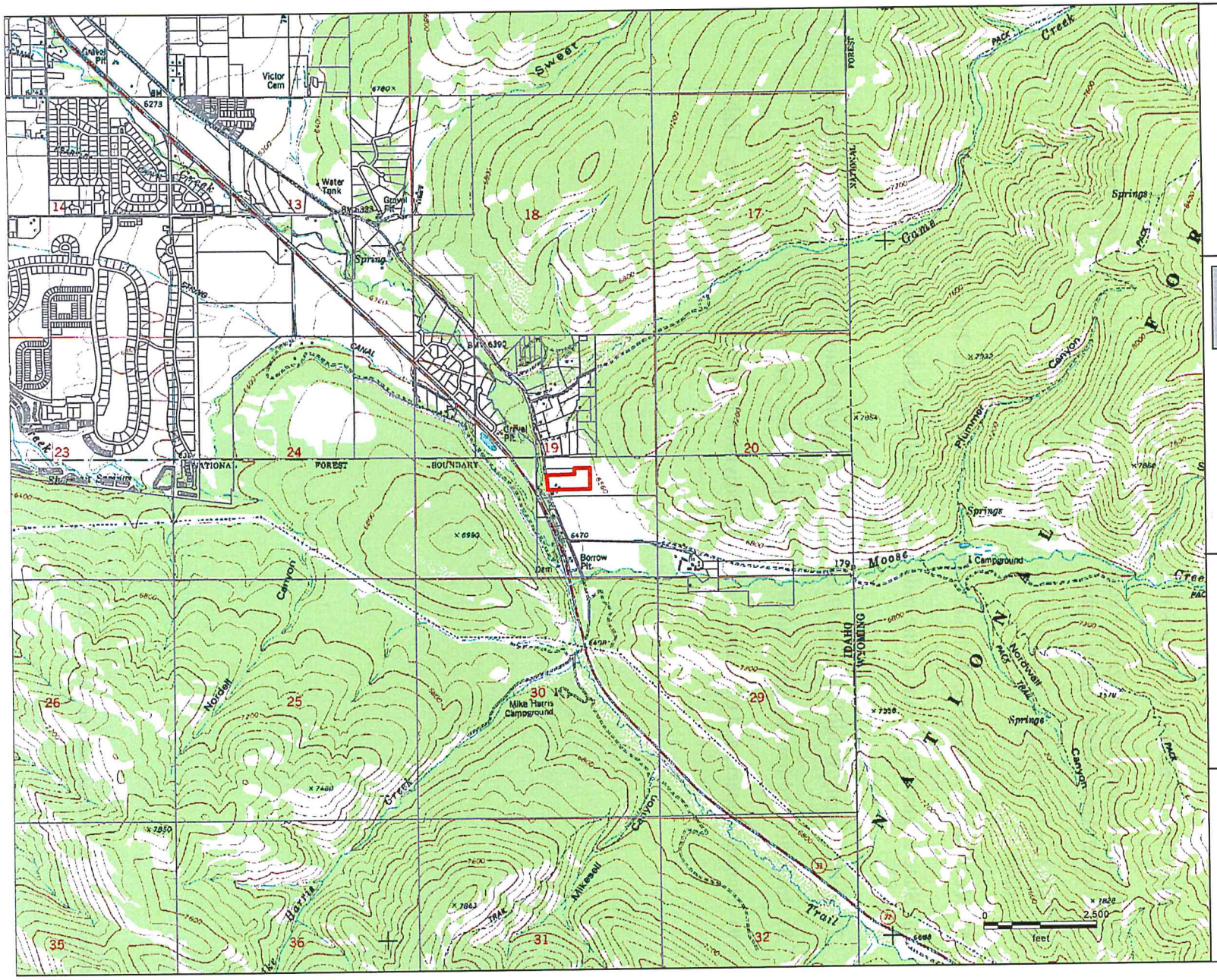
The proposed subdivision has been designed to minimize direct impacts to big game habitat. The applicant has also proposed the following measures to assist in mitigating project-related impacts to indicator species and habitat: habitat restoration/creation, noxious weed management, fence clean-up, and incorporating habitat protection mechanisms into the CCRs for the neighborhood. It is concluded that the proposed development is compliant with Title 9 of the Teton County Code as it pertains to development occurring within the WH Overlay.

APPENDIX 1 – EXHIBITS

NATURAL RESOURCES ANALYSIS/WILDLIFE HABITAT ASSESSMENT

PROPOSED WALIPINI SUBDIVISION, TETON COUNTY, IDAHO

1) Location and Topography, Walipini Subdivision Project Area, Teton County, Idaho.
2) Site Characteristics, Walipini Subdivision Project Area, Teton County, Idaho.
3) National Earthquake Hazards Reduction Program Seismic Hazard Classes, Walipini Subdivision Project Area, Teton County, Idaho.
4) Wildland Urban Interface (WUI) Mapping, Walipini Subdivision Project Area, Teton County, Idaho.
5) Vegetation Covertypes, Walipini Subdivision Project Area, Teton County, Idaho.
6) State Highways Within a One-mile Radius, Walipini Subdivision Project Area, Teton County, Idaho.
7) Teton County Wildlife Habitat Overlay, Walipini Subdivision Project Area, Teton County, Idaho.
8) Indicator Habitat, Walipini Subdivision Project Area, Teton County, Idaho.
9) Habitat Impacts and Creation, Walipini Subdivision Project Area, Teton County, Idaho.



NRA - Exhibit 1

Location and Topography
Walipini Subdivision Project Area
Teton County, Idaho

April 23, 2020

Approximate Scale: 1 inch = 2,000 feet

Legend

- Walipini Subdivision Project Area
- Platted Parcel

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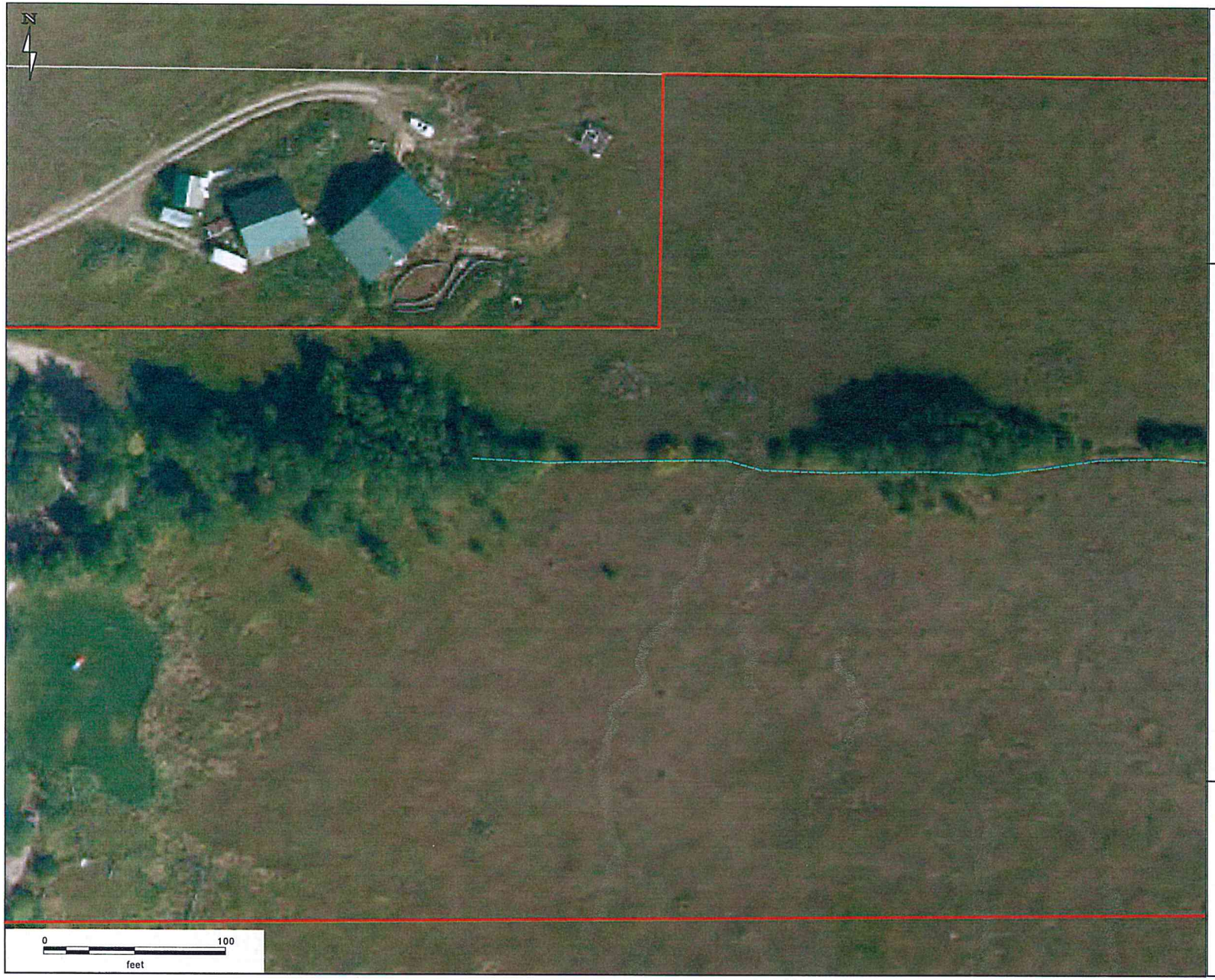

NRA - Exhibit 2

Location and Site Characteristics
Walipini Subdivision Project Area
Teton County, Idaho

April 23, 2020

Approximate Scale: 1 inch = 100 feet @ 11" x 17"
2019 Aerial Imagery

Legend

- Walipini Project Area
- Platted Parcel (Teton County GIS Data)
- Relic Irrigation Ditch

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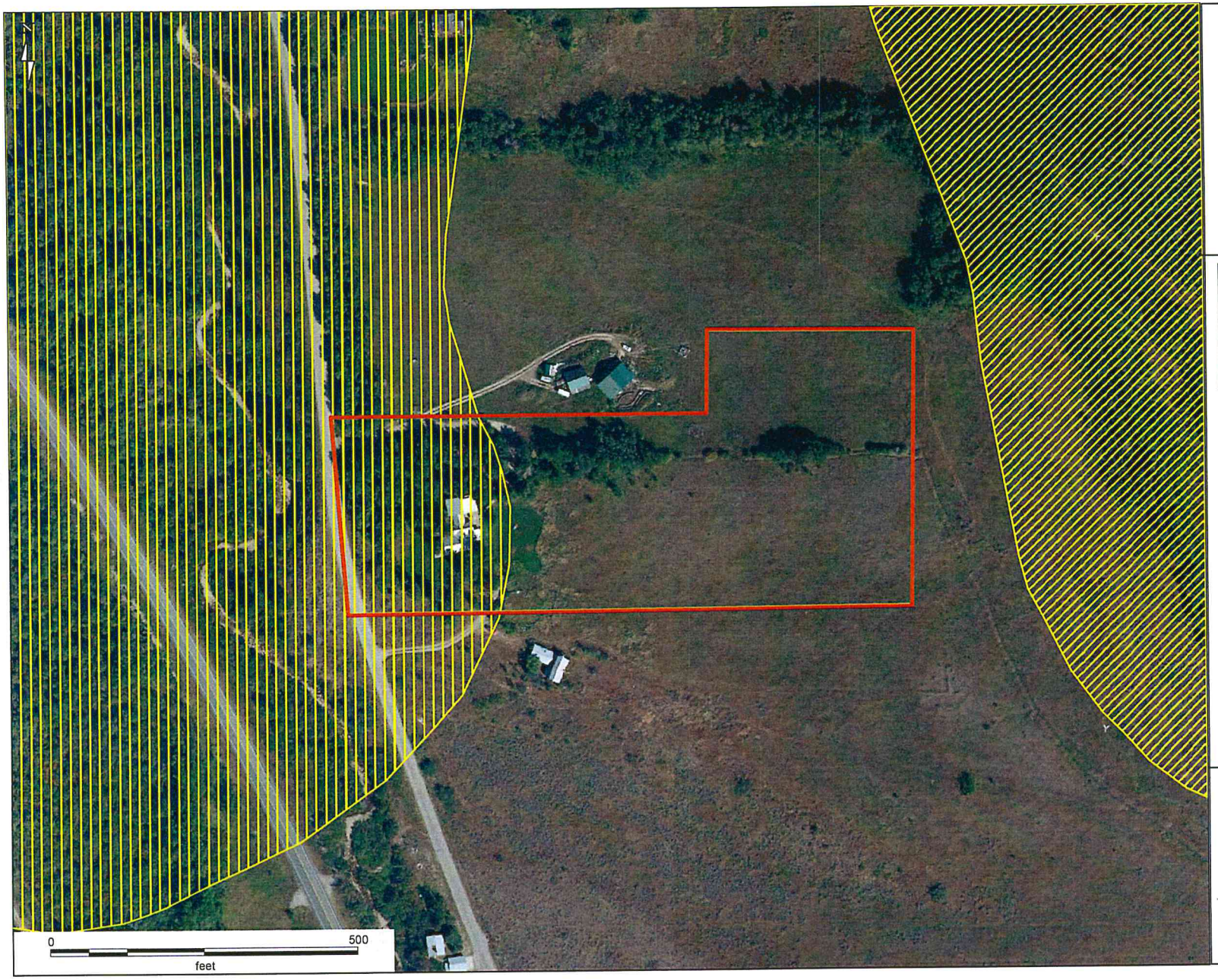

NRA - Exhibit 3

National Earthquake Hazards Reduction Program Seismic Hazard Classes
Walipini Subdivision Project Area
Teton County, Idaho

April 23, 2020

Approximate Scale: 1 inch = 150 feet @ 11" x 17"
2019 Aerial Imagery

Legend

Walipini Project Area

Seismic Hazard Classes Legend

NEHRP Class 3

NEHRP Class 1

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NRA - Exhibit 4

Wildland Urban Interface (WUI) Mapping
Walipini Subdivision Project Area
Teton County, Idaho

April 23, 2020

Approximate Scale: 1 inch = 200 feet @ 11" x 17"
2019 Aerial Imagery

Legend

- Walipini Project Area
- Platted Parcel
- Wildland Urban Interface

research & consulting inc.
Biota

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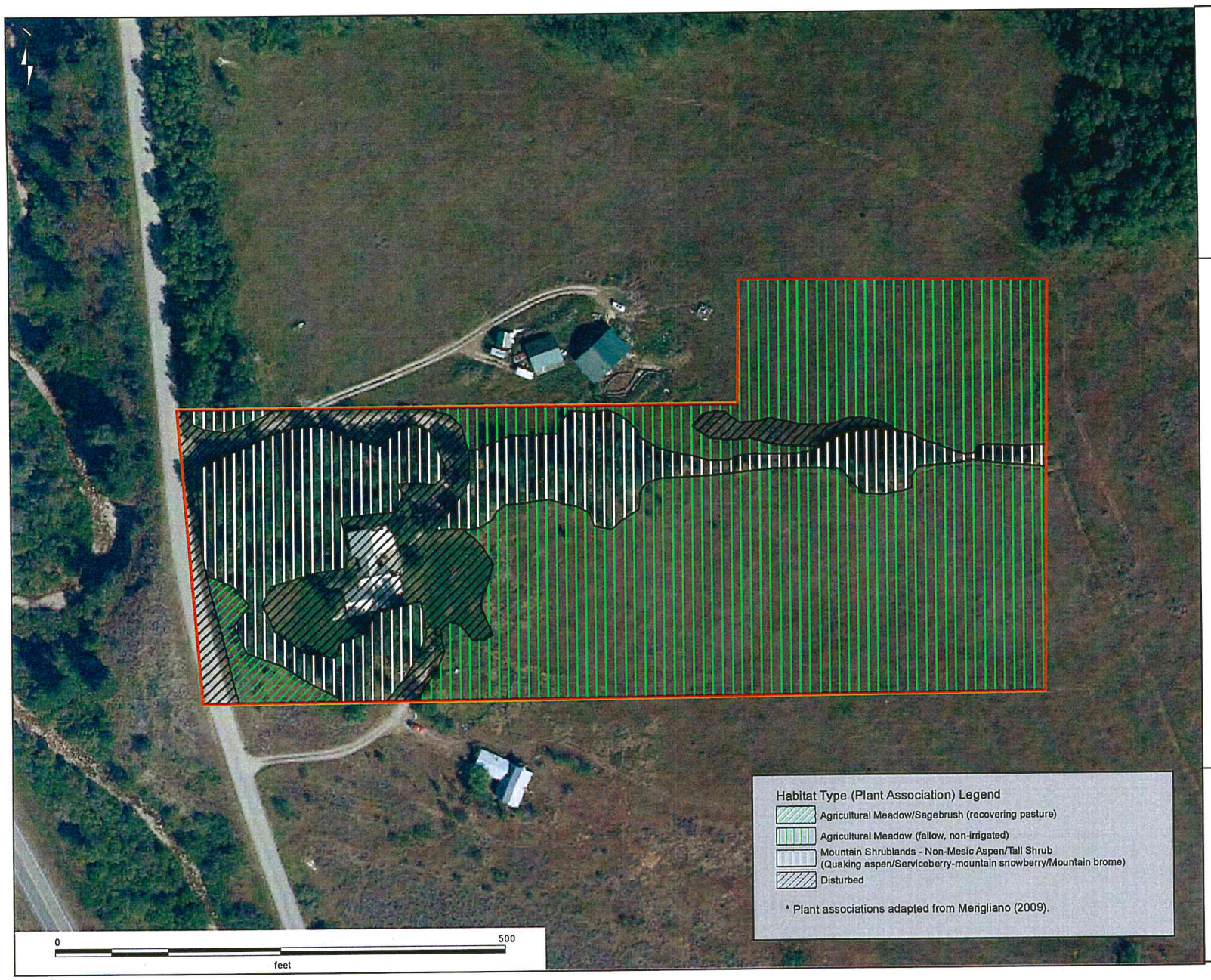

NRA - Exhibit 5

Habitat Types and Plant Associations
Walipini Subdivision Project Area
Teton County, Idaho

April 23, 2020

Approximate Scale: 1 inch = 100 feet @ 11" x 17"
2019 Aerial Imagery

Legend
Walipini Project Area

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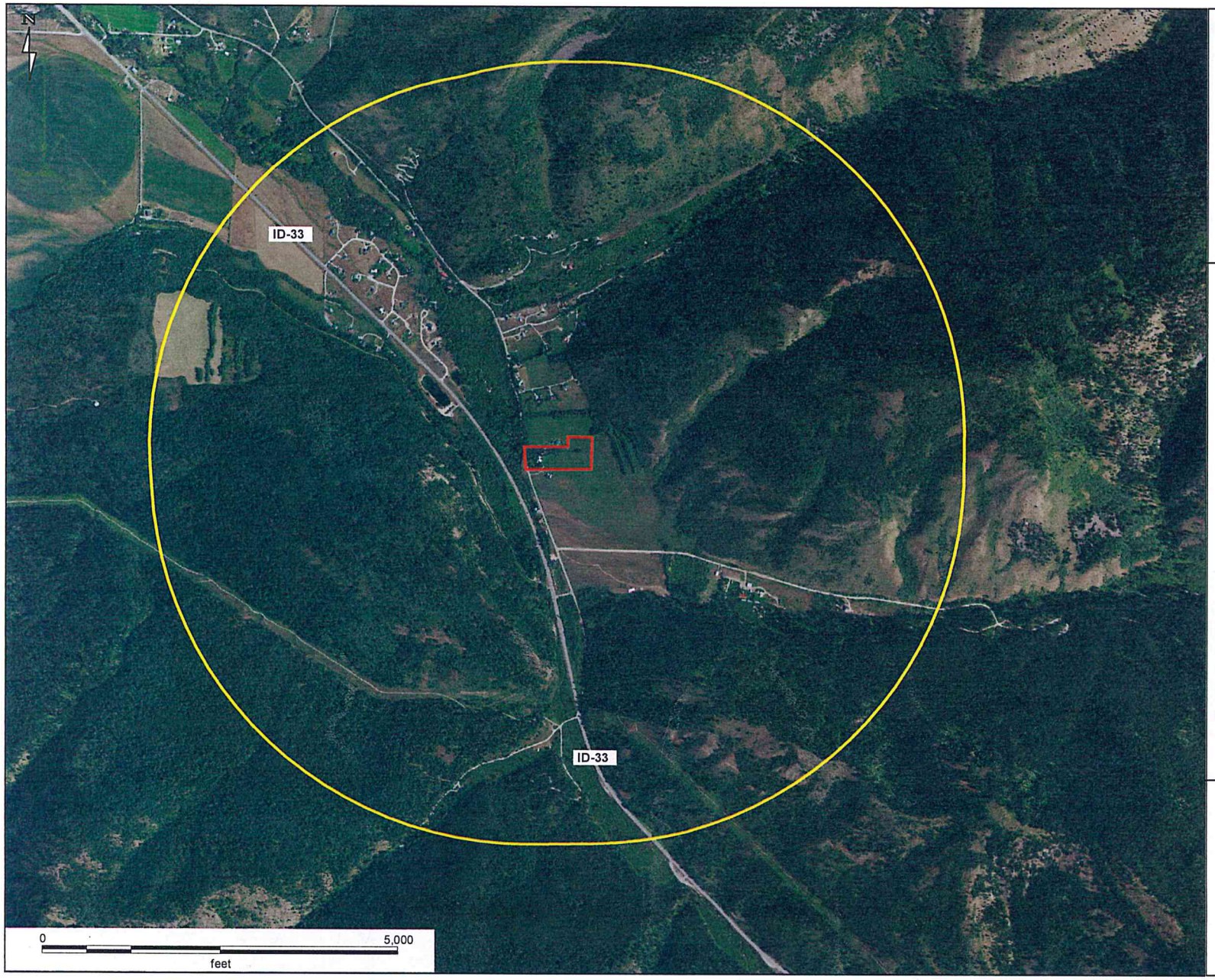

NRA - Exhibit 6

State Highways Within a One-mile Radius
Walipini Subdivision Project Area
Teton County, Idaho

April 23, 2020

Approximate Scale: 1 inch = 1,300 feet @ 11" x 17"
2017 NAIP Aerial Imagery

Legend
- Walipini Project Area
- Une-Mile Radius

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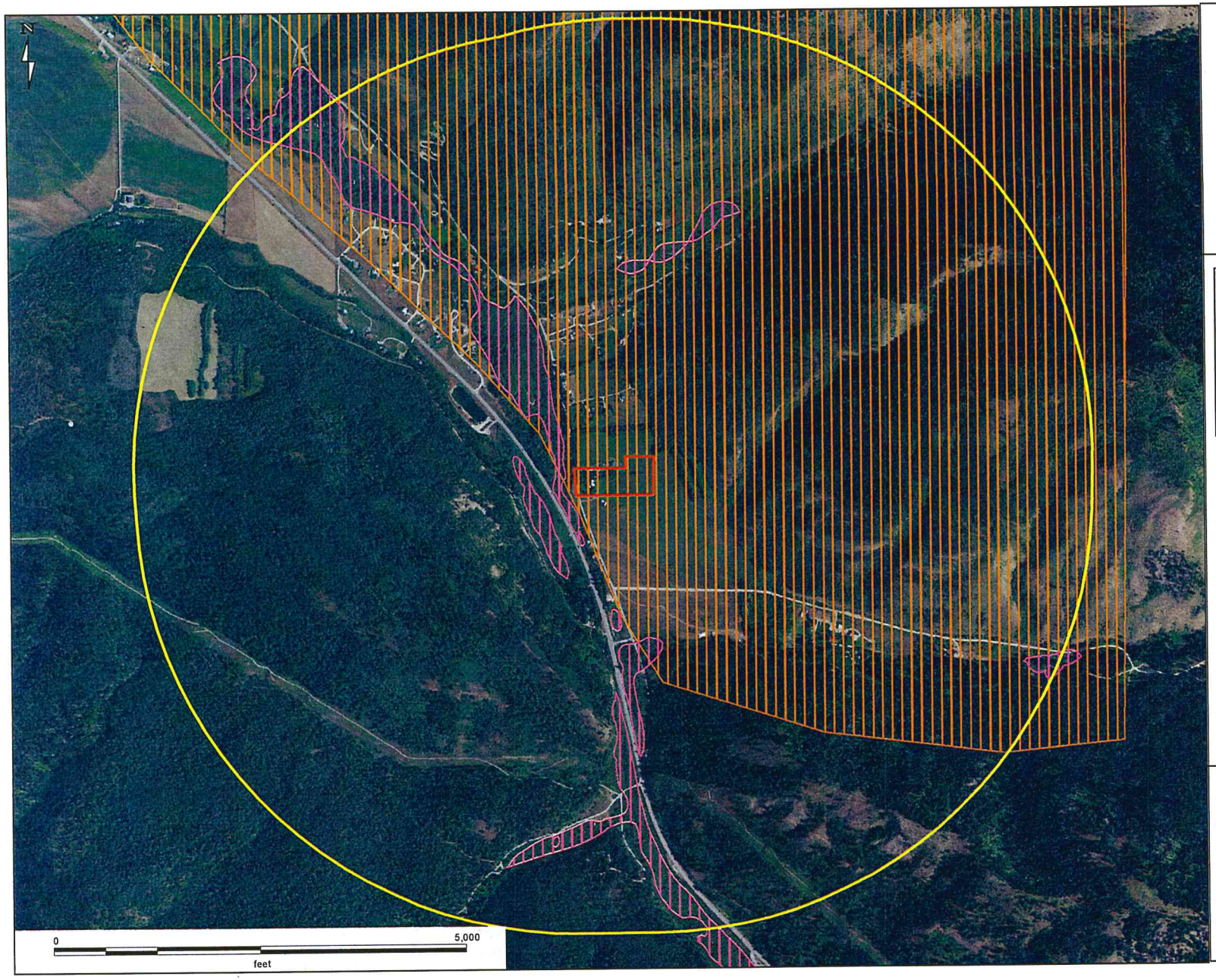

NRA - Exhibit 7

Teton County Wildlife Habitat Overlay
Walipini Subdivision Project Area
Teton County, Idaho

April 23, 2020

Approximate Scale: 1 inch = 300 feet @11" x 17"
2017 NAIP Aerial Imagery

Legend

- Walipini Project Area
- One-Mile Radius

Teton County Wildlife Habitat Overlay

- Big Game Migration Corridors and Seasonal Range
- Songbird/Raptor Breeding and Wintering Habitat

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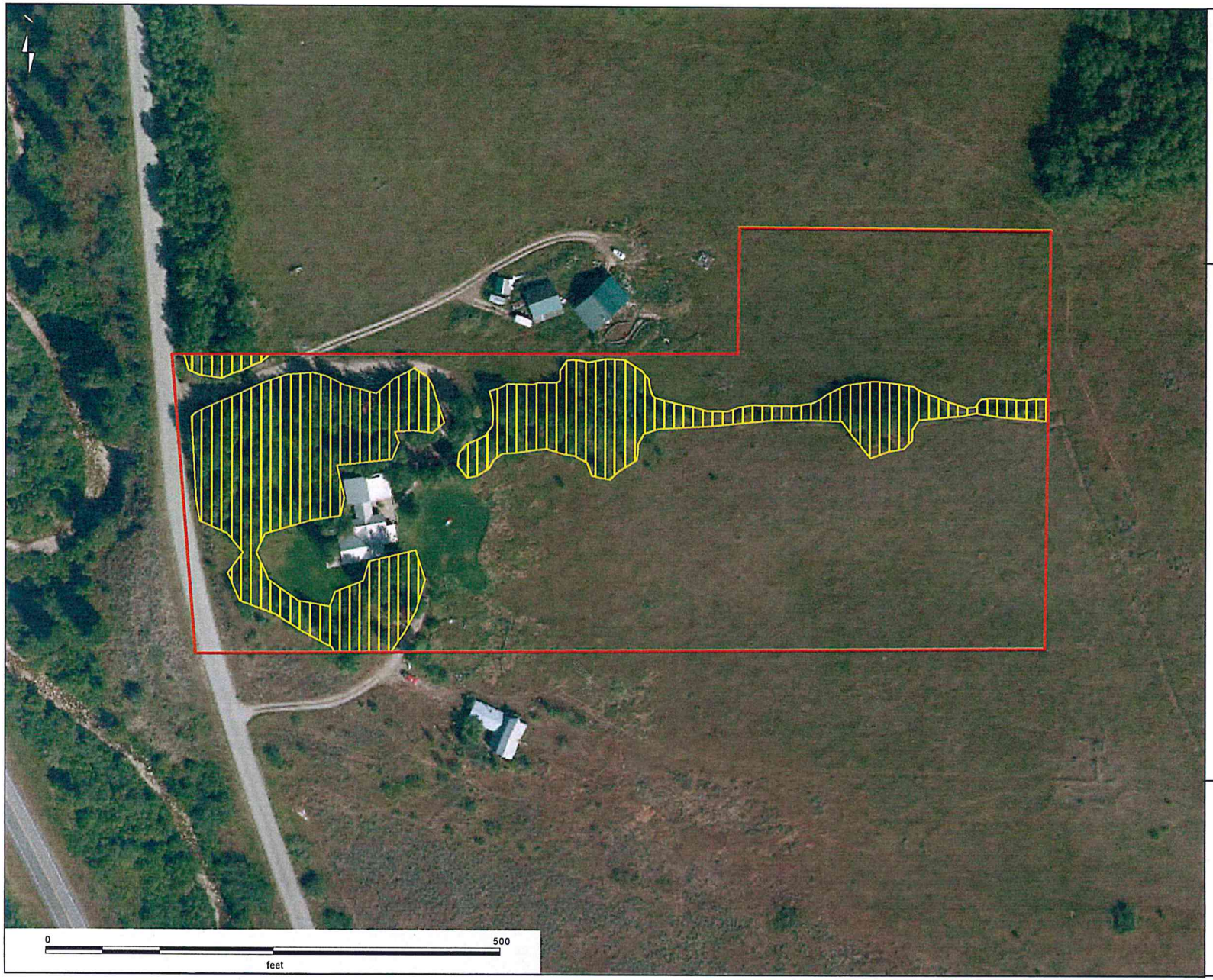

NRA - Exhibit 8

Indicator Habitat
Walipini Subdivision Project Area
Teton County, Idaho

April 23, 2020

Approximate Scale: 1 inch = 100 feet @ 11" x 17"
2019 Aerial Imagery

Legend
Walipini Project Area
Mountain Shrublands
(Big Game Indicator Habitat)

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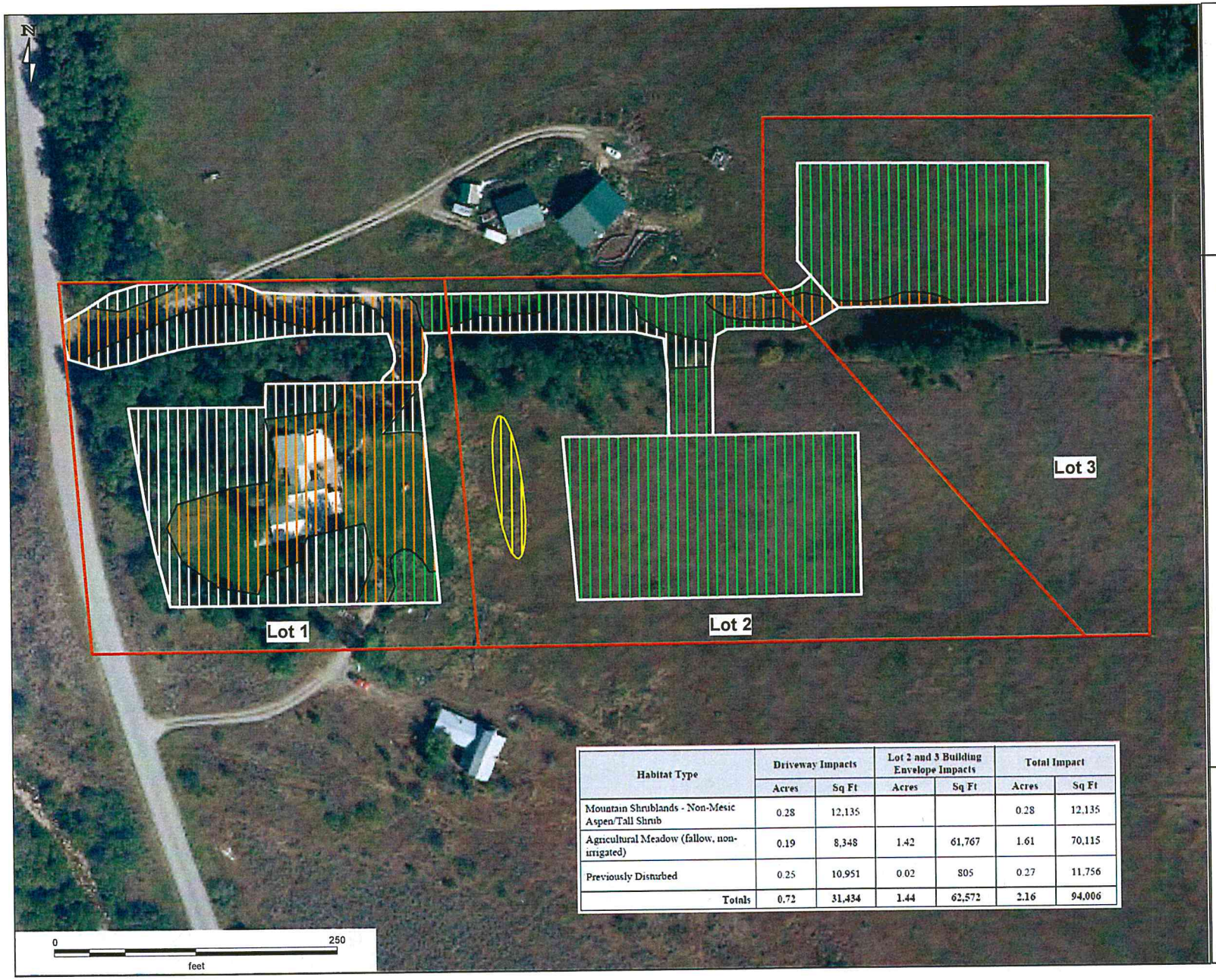
NRA - Exhibit 9

Habitat Impacts and Creation
Walipini Subdivision Project Area
Teton County, Idaho

April 23, 2020

Approximate Scale: 1 inch = 80 feet @ 11" x 17"
2019 Aerial Imagery



Legend
- Proposed Lot
- Proposed Development Limits of Disturbance
- Mountain Shrublands Habitat Creation Area

Habitat Impact Areas
- Agricultural Meadow (Fallow)
- Mountain Shrublands (Aspen/Tall Shrub)
- Previously Disturbed

Habitat Type	Driveway Impacts		Lot 2 and 3 Building Envelope Impacts		Total Impact	
	Acres	Sq Ft	Acres	Sq Ft	Acres	Sq Ft
Mountain Shrublands - Non-Mesic Aspen/Tall Shrub	0.28	12,135			0.28	12,135
Agricultural Meadow (fallow, non-irrigated)	0.19	8,348	1.42	61,767	1.61	70,115
Previously Disturbed	0.25	10,951	0.02	805	0.27	11,756
Totals	0.72	31,434	1.44	62,572	2.16	94,006

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APPENDIX 2 – PHOTOGRAPHIC DOCUMENTATION

NATURAL RESOURCES ANALYSIS

PROPOSED WALIPINI SUBDIVISION, TETON COUNTY, IDAHO

Photo 1. Aspen/tall shrub habitat surrounding the existing residence within the project area.

Photo 2. Aspen/tall shrub habitat along the inactive ditch channel in the north-central portion of the project area.

Photo 3. Canada thistle infestation in the in the agricultural meadow in the central portion of the project area.

Photo 4. The agricultural meadow and aspen/tall shrub habitat in the eastern portion of the project area.

APPENDIX 3 – GENERAL LAND USE RECOMMENDATIONS

Proposed Walipini Subdivision, Teton County, Idaho

The following recommendations, if implemented, would aid in protecting, preserving, and improving the wildlife and habitat values associated with the property.

1. **Agriculture.** Any livestock kept on the properties should be kept in corrals or paddocks to minimize impacts on native vegetation and wildlife habitat. Measures should be taken to reduce the likelihood of attracting deer, elk, and/or moose to hay/feed stockpiles and livestock feeding areas.

2. **Fences.** An assessment of site-specific fencing needs should be made for the property. Fences frequently disrupt or discourage normal movement and use patterns of wildlife or actually present hazards to wildlife and their use should be avoided or minimized. If the control of livestock is not necessary, perimeter fences around the parcel should be removed. In situations where perimeter fences are necessary, they should be constructed in such a way so as to reduce their potential negative impacts to wildlife. Unless fences are intended to exclude wildlife (e.g., for gardens) or restrain domestic pets, fence construction should closely adhere to the recommendations provided below for wildlife-compatible fences.

   Recommendations for any fences internal to or around the parcel are provided below:

   1) The preferred fence design is a combination of pressure-treated posts, wire strands, and a pressure-treated top pole. This design effectively controls livestock while promoting wildlife movements.
   2) The spacing of fence posts should be on 12-foot centers.
   3) The overall height of the fence should not exceed 42 inches; the preferred height is 38 inches in most situations and 40 inches if problems develop.
   4) Installed fence posts should have extra height to allow raising or lowering top pole 38-42 inches above the ground.
   5) The bottom wire should consist of smooth twisted wire located 16-17 inches above the ground. This will allow small and medium-sized mammals, such as moose/ elk calves and deer fawns, to crawl under the fence.
   6) The second and third wire strands can be barbed wire (if necessary) and spaced evenly over the 26-27 inches distance between the bottom strand and the top of fence (e.g., the second strand is at 25 inches and the third strand is at 34 inches). It may be that only one strand of wire is actually needed and could be placed at about 29 inches. Spacing between the top pole and the first strand of wire also varies between 6 in on 38-in high fence and 10 inches on 42-inches fence.
   7) The top pole spiked to the side of the fence posts will facilitate animals attempting to jump the fence and protect them from injuries resulting from rubbing or becoming entangled in a top strand of wire. The top pole should be set at either 38 or 42 inches due to alternating top rails.
   8) Gates should be constructed of wire with an optimal height of 38 inches. The gates should be installed at least every 450-foot of continuous fence. The spacing of the wires should be the same as that on the fence (i.e., bottom at 16-17 inches above ground, top at no more than 42 inches, and either one or two strands spaced evenly between). The top and bottom strands should be of smooth-twisted wire. The middle strand(s) can be barbed wire, if necessary. Opening gates will allow wildlife access to the property during periods when livestock control is unnecessary. Gates should be left opened whenever possible to facilitate ease of wildlife movement.

   These recommendations generally follow guidelines developed by the Wyoming Game and Fish Department and the Bureau of Land Management. If adhered to, the fences resulting from these recommendations will be "wildlife friendly" and promote the continued use of the important wildlife habitat found on the parcel. In particular, crucial wildlife winter habitats will be easily accessible to animals, especially if efforts are taken to lower top poles or open gates when livestock are not present.

3. **Non-native Plants.** The introduction of any non-native plants that might compete with or harm native species and result in their decline is discouraged. Exceptions to this would be the introduction of a non-native species that would improve or prevent undue damage to the natural environment (e.g., soil stabilization) or plants within the immediate confines of the building envelope.

4. **Non-native Fauna.** The introduction into the wild of any non-native or domesticated animal species that might compete with or harm native species and result in a decline in their use is strongly discouraged.

5. **Vegetation Alteration.** The destruction, removal or alteration of living or dead vegetation is discouraged except when absolutely necessary. This is particularly important for properties that have wildlife use occurring within stands of woody overstory and shrubby understory vegetation. Standing dead trees, and dead and down vegetation provide important

habitat for a variety of smaller wildlife species and greatly diversifies a piece of land. Woodpeckers forage for insects in standing dead trees and create nesting cavities for themselves and numerous other bird species. Fallen, rotten plant material creates shelter used by many small mammals while simultaneously returning nutrients to the soil.

6. **Roads.** The construction of roads should be minimized.

7. **Habitat Enhancement.** Wildlife habitat enhancements are acceptable physical alterations to the property. A plan describing enhancements and delineating affected areas should be developed by a qualified, county-approved consultant. This plan should consider negative impacts to non-target species.

8. **Herbicides**. The use of chemical herbicides and pesticides are discouraged except for controlling noxious weeds. Application of state-approved herbicides should be done responsibly by persons appropriately licensed and trained, and label and application instructions should be strictly adhered to.

9. **Burning.** The burning of any materials or vegetation is discouraged except in accordance with government regulations, and in the case of vegetation, where burning is shown to be beneficial to wildlife.

10. **Off-road Vehicle Use.** Control the use of any off-road vehicles such as all-wheel drives, motorcycles, all-terrain vehicles, and snowmobiles, except when necessary for specified activities on existing roads. This will allow wildlife to adapt to predictable patterns of human use.

11. **Topographic Alterations.** The filling, excavating, dredging, mining, drilling, or removing of topsoil, sand, gravel, rock, minerals, or other materials, or other changes of the topography of the property is discouraged, except where absolutely necessary or associated with approved development and enhancement plans.

12. **Domestic Pets.** Free-roaming, unrestrained domestic pets disturb wildlife. Unrestrained pets can easily disrupt wildlife use on parcels and must be controlled. Dogs will readily chase, harass, and even kill both small and large mammals, as well as birds. Although less conspicuous than dogs, free-roaming cats can be as damaging to wildlife as dogs. Cats are effective predators of small birds and mammals and free-roaming cats have a high potential (both short- and long-term) for disturbing many wildlife species.

13. **Wildlife Feeding.** Intentionally feeding moose, deer, and elk anywhere in Teton County, Idaho is illegal.

14. **Wildlife Harassment.** Mule deer, elk, and moose will be present on the property at various times of the year. This is because important habitats for these ungulates are found on and in the vicinity of the parcel. The presence of these and other wildlife species should be expected and tolerated. People residing or owning property within the subdivision should be both respectful of and sensitive to wintering wildlife and not purposefully harass these animals as they struggle to survive harsh winter conditions. Moose, in particular, can be expected to browse upon landscaped vegetation and this activity can sometimes cause significant damage to this vegetation. Project proponents should make a concerted effort to educate themselves and future residents on how to minimize wildlife harassment.

15. **Living in Bear Country.** The project area is located in bear habitat, and care should be taken to minimize bear attractants in the neighborhood. The following precautions have been adapted from IDFG recommendations for living in bear country. These precautions can help minimize bear encounters and prevent bears from accessing human foods:
    1) Garbage and Recyclables - Bear-resistant garbage and recycling containers should be used. Ensure that bear-resistant containers are properly closed and latched, and never tamper with the latching mechanism. If non bear-resistant containers are used, they should be stored inside an enclosed building or bear-resistant enclosure until the morning of waste/recycling pick-up, and promptly returned to secure storage after waste pick-up. Never leave trash/recycling outside overnight, and don't let garbage pile up or develop strong odors that can attract bears.
    2) Compost Piles - If you must have a compost pile, enclose it with electric fencing. Don't put meat, fish, melon rinds and other pungent/smelly scraps in the pile. Better yet, compost only leaves and grass, not kitchen scraps. Keep the pile aerated and properly turned. Add lime to promote decomposition and reduce odor.
    3) Bird Feeding - Do not feed birds, including hummingbirds, during the active bear season (March-November), and clean up any spilled bird seed.
    4) Pet Food - Keep pet food inside at all times.
    5) Fruit Trees/Shrubs - If fruit trees/shrubs are present, fruit should be picked promptly when it begins to ripen. Remove any fruit that has fallen to the ground as soon as possible.
    6) Food storage - Do not keep coolers, refrigerators or freezers outside or on porches.
    7) BBQ Grills - Thoroughly clean BBQ grills and smokers after each use. If possible, store grills and smokers inside a garage or shed when not in use.