MARCH 3, 2023

LONE PINE SPRINGS SUBDIVISION

NATURAL RESOURCES ANALYSIS

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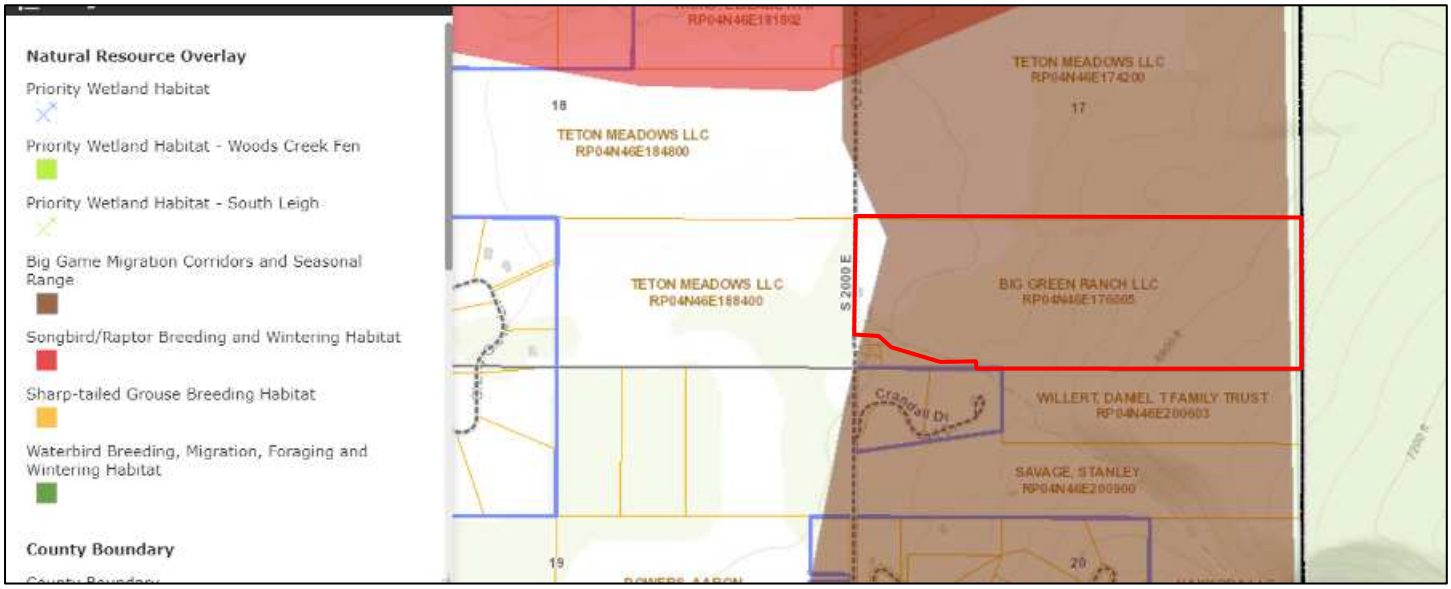
1. SUMMARY

1.A. PURPOSE

The purpose of this report is to identify and analyze impacts to natural resources within the proposed Lone Pine Springs Subdivision in compliance with Teton County Code 9-3-2 (C-2-c-WH). This analysis is required because the proposed parcel is located within the big game migration corridor and seasonal range overlay as identified by Teton County. The application materials were submitted prior to August 3, 2022 and are subject to Title 9 of the previous County Code, Revised 5/16/2013. This report describes the natural resources present, potential impacts, and suggested mitigation actions to minimize or eliminate impacts to Teton County protected natural resources.

Figure 1. Lone Pine Springs Subdivision - Teton County Natural Resource Overlay Map



1.B. FINDINGS

The proposed Lone Pine Springs Subdivision is located between Darby Canyon and Fox Creek, along 2000 E. It contains several barns/outbuildings. The property supports multiple Teton County Indicator Species and Indicator Habitats that are very valuable to wildlife.

1.C. CONCLUSION

This natural resource analysis concludes that the proposed Lone Pine Springs Subdivision has the potential to impact the big game migration corridor/seasonal range overlay.

1.D. SUGGESTED MITIGATION MEASURES

To maintain existing habitat on the property for big game, the proposed development should follow these suggested mitigation measures.

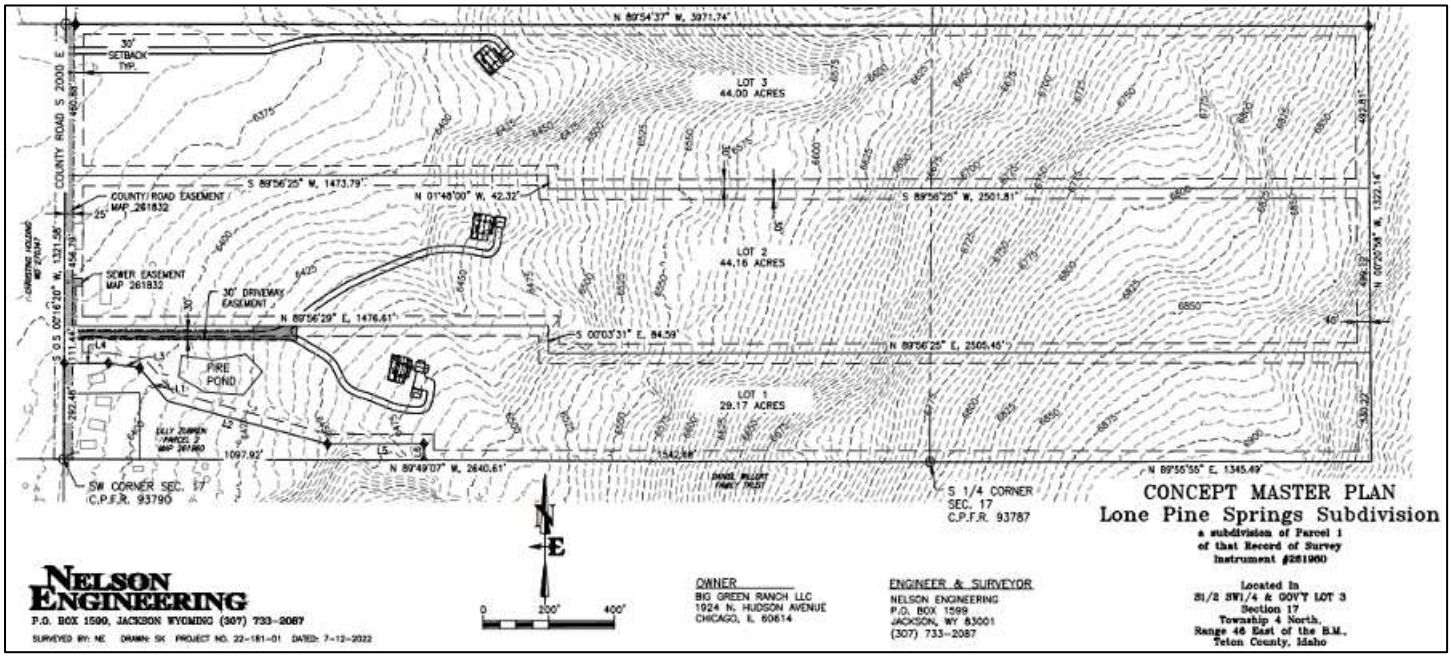
- Site all development within the meadow and hay pasture vegetation cover types.
- Maintain adequate buffers from forested and riparian areas for wildlife and water quality.
- Cluster development (buildings and roads) to minimize habitat fragmentation.

2. PROPOSED ACTION

2.A. PROJECT DESCRIPTION

The landowner proposes to subdivide a 117.3-acre parcel that contains several barns/outbuildings into three parcels of 29.17-acres. 44.00-acres, and 44.16- acres.

Figure 2. Lone Pine Springs Subdivision – Concept Master Plan



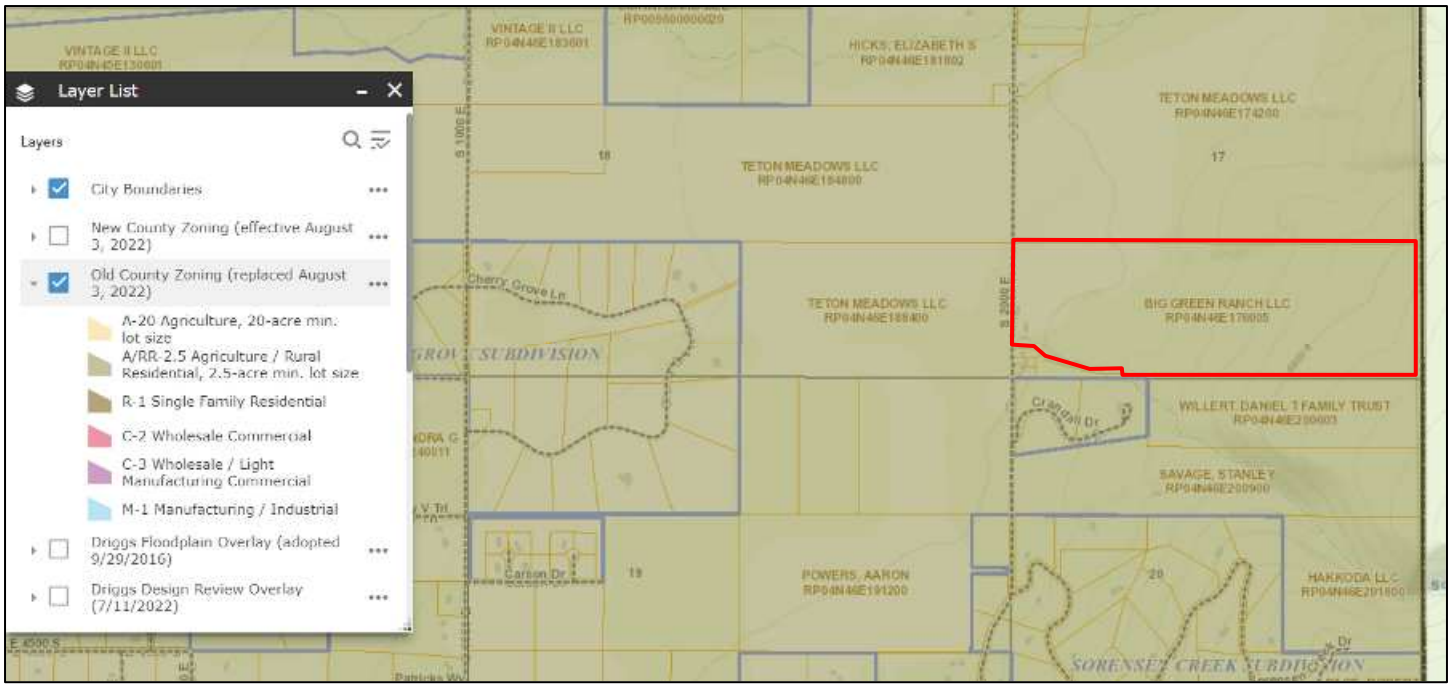
2.A.1 GENERAL LOCATION

The property is located in SEC 17 T4N R46E in the foothills between Darby Canyon and Fox Creek Canyon, on the Idaho/Wyoming border. To access, drive south from Driggs on Hwy 33, turn left/east onto 3000 S. Continue east 2.5 miles and turn right/south onto 2000 E. Continue south 0.9 miles to the property on your left/east.

Figure 3. Lone Pine Springs Subdivision - Vicinity Map

Figure 4. Lone Pine Springs Subdivision - Teton County, ID GIS

Figure 5. Lone Pine Springs Subdivision – Old County Zoning (Teton County, ID GIS)



METHODOLOGY

Various data sources were reviewed to gather pertinent information. This data was reviewed to become familiar with the site and to assist in the determination of the extent of natural resources within the project area. The following data sources were reviewed and are included below. A site visit was performed on January 26, 2023 to field verify the extent of natural resources on the property.

- ❑ Current and historic aerial photographs (Google Earth, NAIP)
- ❑ Teton County Idaho GIS mapserver https://tetonidaho.maps.arcgis.com/home/index.html

Table 1. Lone Pine Springs Subdivision Natural Resource Analysis References

Item	Methods / Data Source
Natural resource overlays	• Teton County Idaho GIS – Natural Resource Overlay • Site visit, field mapped
Floodplains, wetlands, and riparian areas	• Floodplains: Teton County Idaho GIS – 100 yr floodplain (Existing SFHA) • Wetlands: Teton County Idaho GIS priority wetland habitat overlay, field mapped and drone imagery (2/1/2023) was used to refine mapping in areas occupied by moose • Riparian areas: Site visit
Areas of geological or seismic hazard shown on documents prepared by or for any state or federal agency	• Teton County Earthquakes 1969-2015, Teton County Idaho GIS mapserver https://tetonidaho.maps.arcgis.com/home/index.html
Areas of the property located within an area of "High" or Extreme" wildfire danger, as designated on the latest adopted plan of the Teton County Fire Protection District	• 2016 Wildfire Protection Plan • 2009 Wildland-Urban Interface Map (Teton County)
Existing vegetation communities and covertypes as defined in Merigliano, M. 2009. A Field Manual for Classified Vegetation in the Upper Snake River Valley	• Site visit, field mapped • Merigliano classifications not used, not a good fit for vegetation found on the property. Mapped based on dominant covertype. Too much snow to see herbaceous layer. • Drone imagery (2/1/2023) was used to refine mapping in areas occupied by moose
Ridges and rock outcroppings; Hillsides	• Site visit • Teton County Idaho GIS - Hillside Overlay
Areas of the property that are located within one (1) mile of any State Highway or Ski Hill road and are visible from any State Highway or Ski Hill Road.	• Google Earth measurement tool; site visit

3. CURRENT CONDITIONS

3.A. AREA DESCRIPTION

The Lone Pine Springs Subdivision is proposed on a 117.3-acre property located along Sorensen Creek. The property consists of an open field with several barns/outbuildings and a steeper heavily forested hillside. The property has been grazed by a small herd of horses for the previous several years. The parcel adjoins public Forest Service land along its eastern boundary, and is heavily used by wildlife year-round.

Figure 6. Lone Pine Springs Subdivision – Google Earth 10/4/2021

3.B. INDICATOR SPECIES

The project area is within the Teton County big game migration corridor and seasonal range wildlife habitat overlay (Figure 1). In addition to these layers, Teton County has identified seven Indicator Species and seven Indicator Habitats likely to occur on the Lone Pine Springs property where impacts should be minimized to protect natural resources. The following table outlines these species and the dominant vegetation type associated with their habitat. The forested areas on the property provide habitat for big game, Columbian sharp-tailed grouse (wintering), black bear, songbirds, and raptors. Given the landscape position and habitat quality there is also potential habitat for grizzly bear and wolverine. Sorensen Creek may provide trout habitat. The palustrine emergent wetlands provide valuable wildlife habitat and water quality benefits but probably do not provide habitat for priority wetland dependent wildlife like long-billed curlew and trumpeter swan.

Table 2. Indicator Species Habitat

Indicator Species	Habitat	Vegetation present within the project area?
Big Game - Elk and Mule Deer	Mountain shrublands	Yes
Trout	Perennial rivers and creeks	Yes
Water Birds - Sandhill Crane, Trumpeter Swan	Palustrine emergent wetlands	No
Songbirds and Raptors	Forested riparian habitat and mountain shrublands	Yes
Columbian Sharp-Tailed Grouse	Sagebrush-steppe and mountain shrublands	Yes

In addition to reviewing the county mapping layers and conducting a site visit, Intermountain Aquatics personnel interviewed Idaho Fish & Game Regional Manager, Rob Cavallaro, to gain a better understanding of the importance of the foothills and the parcel to indicator species.

1/31/2023 Notes from call with Rob Cavallaro, Regional Manager, Wildlife Habitat at Idaho Department of Fish and Game

- This parcel contains a large amount of Priority Wildlife Habitat as detailed in the report by the Upper Snake Region Idaho Department of Fish and Game "A Summary of Fish and Wildlife Resources in Teton County, Idaho" (April 2022) – the boundary area of the Caribou-Targhee National Forest.
- Parcel has a lot of different veg types which makes it valuable habitat for a lot of species. It also contains a perennial spring creek with fringe wetlands and Sorensen Creek (perennial) and which are important resources for wildlife.
- Provides habitat for:
    - Mule deer, elk, and moose.
        - Wintering areas are the limiting factor for ungulates in this area, and this parcel is excellent wintering habitat for mule deer, moose, and elk.
        - Excellent wintering habitat for elk, calving habitat in spring, and mating in fall. A herd is known to frequent this area.
        - Fawning habitat for mule deer.
    - Songbirds, raptors, and grouse
        - Suitable winter habitat for Columbian sharp-tailed grouse
        - Suitable year-round habitat for Ruffed grouse
        - Songbird breeding
    - Bears – black bears use year-round, especially in fall to eat berries.
        - High potential for grizzly bears to use this habitat, and have conflicts with people.
    - Mountain lions – high risk of conflict with people here
- Wintering areas without pressure from outdoor recreation are especially hard to find, and makes this parcel highly valuable for wildlife.
- Wildlife conflicts are likely here: The most likely areas for human interaction and conflict with large carnivores (bears, mountain lions) in Teton County occur near the Caribou-Targhee National Forest Boundary.
    - Conflicts with moose are also likely here
- Mitigation recommendations:
    - Keep the woody vegetation (forests) intact. Limit any roads or buildings in this vegetation.
    - Keep development as low as possible on the hillside to minimize fragmentation of the valuable forest, keep it all in the meadow if possible (and limit fragmentation here as well).
    - Minimize driveways and buildings to reduce fragmentation
    - Be aware of a high risk of wildlife conflicts

There are no current conservation easements within 3 miles of the property according to Teton Regional Land Trust on 1/27/2023.

3.C. SPECIAL STATUS SPECIES

The US Fish & Wildlife Service Information for Planning and Consultation (IPaC) tool was used to generate a site-specific list of potential endangered species and their habitat that may occur on the property and surrounding area. Cana Lynx (Threatened), Grizzly Bear (Threatened) and North American Wolverine (Proposed Threatened) were listed as a species potentially affected by activities in this location due to their habitat within the Teton Mountain range and their potential to use the Darby and Sorensen Creek corridors. The riparian corridors and berry producing shrubs in the area provide seasonal habitat for Grizzly Bear. Critical habitat for North American Wolverine does not occur on the parcel but transient use is possible. Monarch butterfly (candidate species) are also listed for this area, but this habitat is not found on the property. Whitebark Pine (Threatened) is also listed for this area.

3.D. ADDITIONAL NATURAL RESOURCES

3.D.1 FLOODPLAINS, WETLANDS, AND RIPARIAN AREAS

Sorensen Creek runs west through the southwest corner of the property (Figure 7). Additionally, a spring creek originates in the middle of the property and runs northwest to an irrigation ditch and small seasonal reservoir on the property (Figure 8). The only wetlands found on the property are the springs where the spring creek originates and along the spring creek, although an official wetland delineation was not performed. Sorensen Creek is incised, and no wetlands were observed outside of the ordinary high water mark. No riparian areas were observed. There is no floodplain mapped on the property.

Figure 7. Lone Pine Springs Subdivision – Teton County GIS Hydrography layers

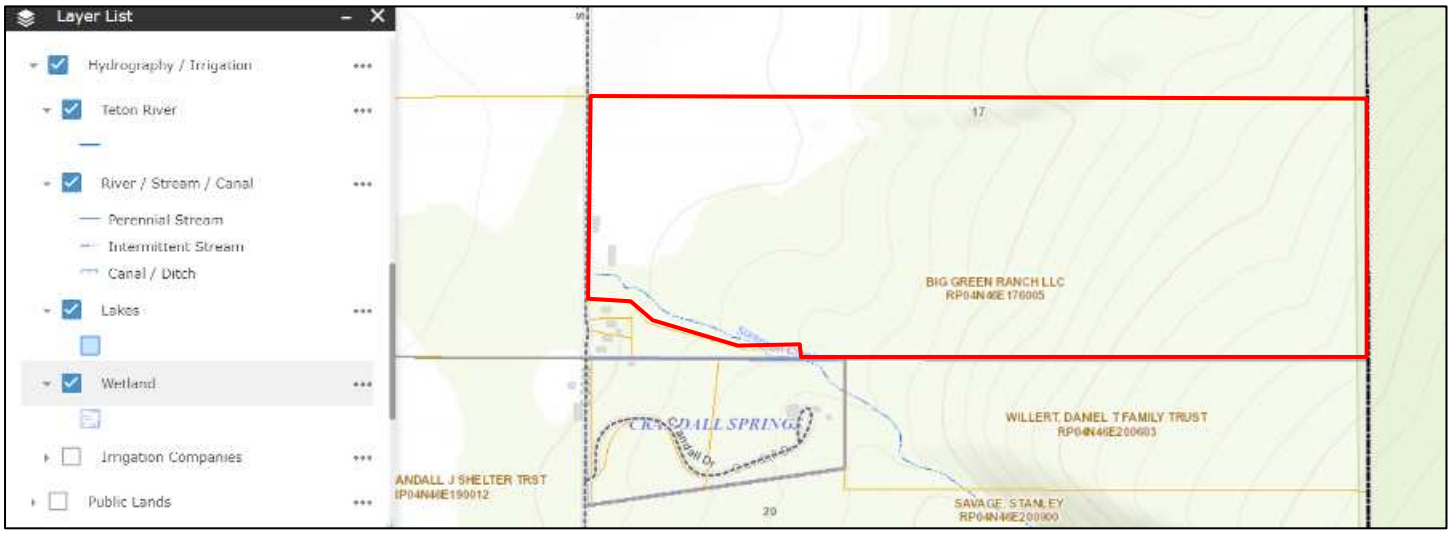


Figure 8. Lone Pine Springs Subdivision – Wetlands and Creeks

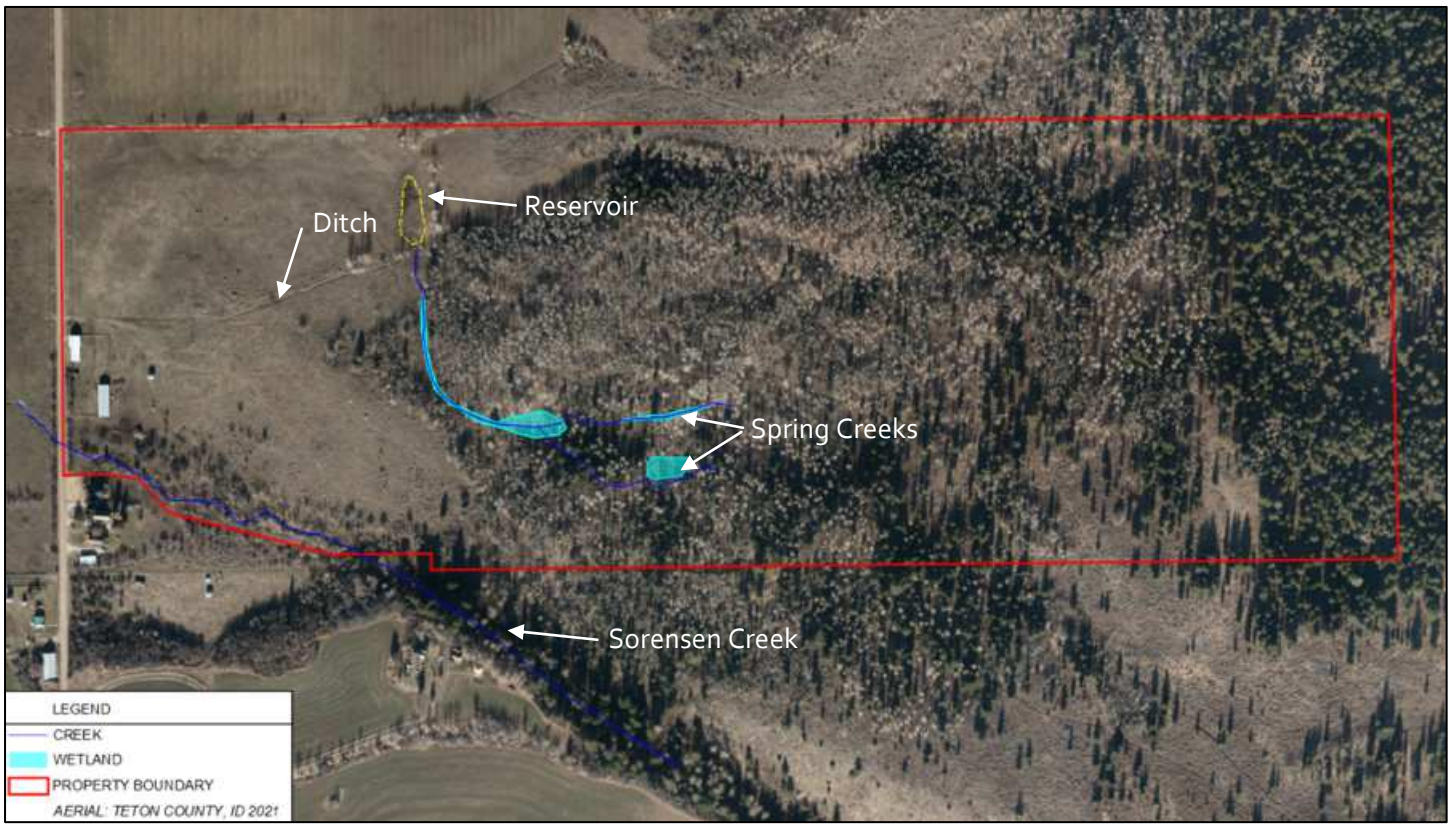
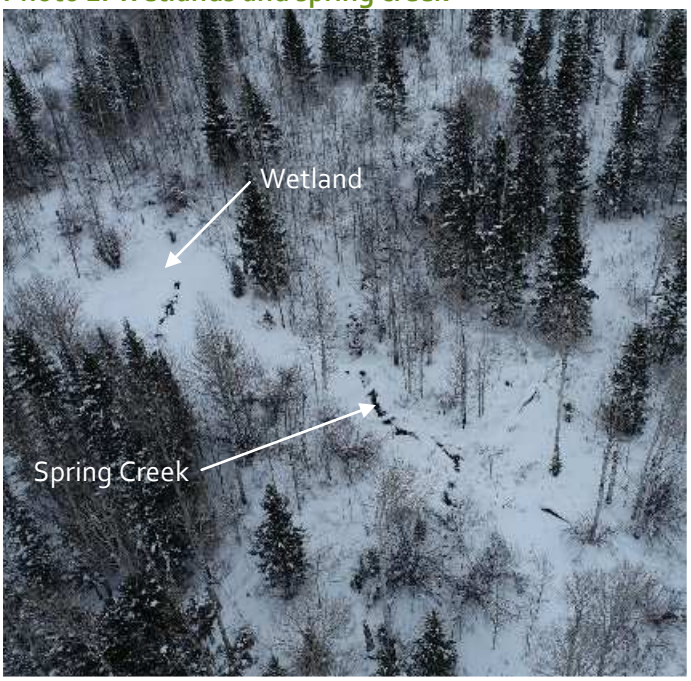


Photo 1. Sorensen Creek

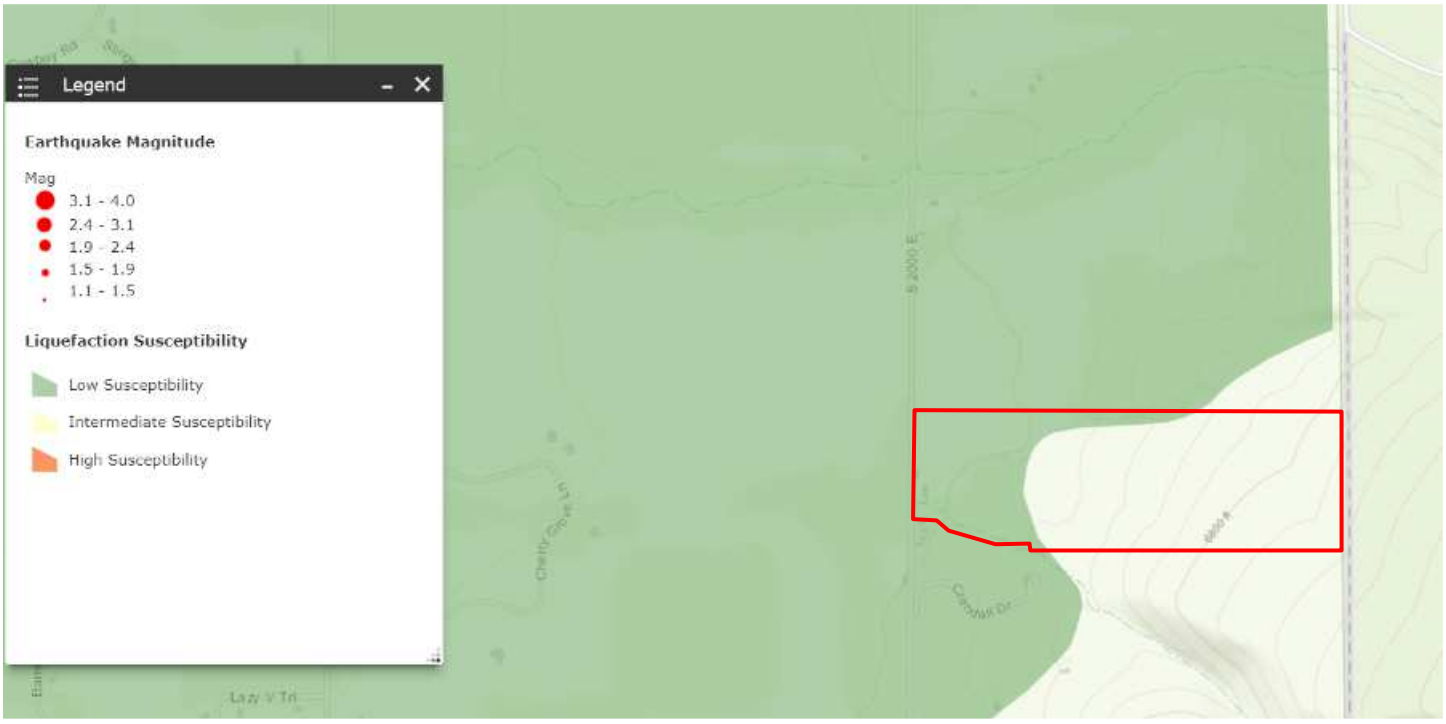
Photo 2. Wetlands and spring creek



AREAS OF GEOLOGICAL OR SEISMIC HAZARD SHOWN ON DOCUMENTS PREPARED BY OR FOR ANY STATE OR FEDERAL AGENCY

There are no areas of geologic or seismic hazards shown on the Teton County Earthquake overlay within the proposed Lone Pine Springs Subdivision property boundaries. The USGS Earthquake Hazards Faults mapper does not show any faults within Teton Valley and there were no earthquakes mapped on the property from 1969-2015.

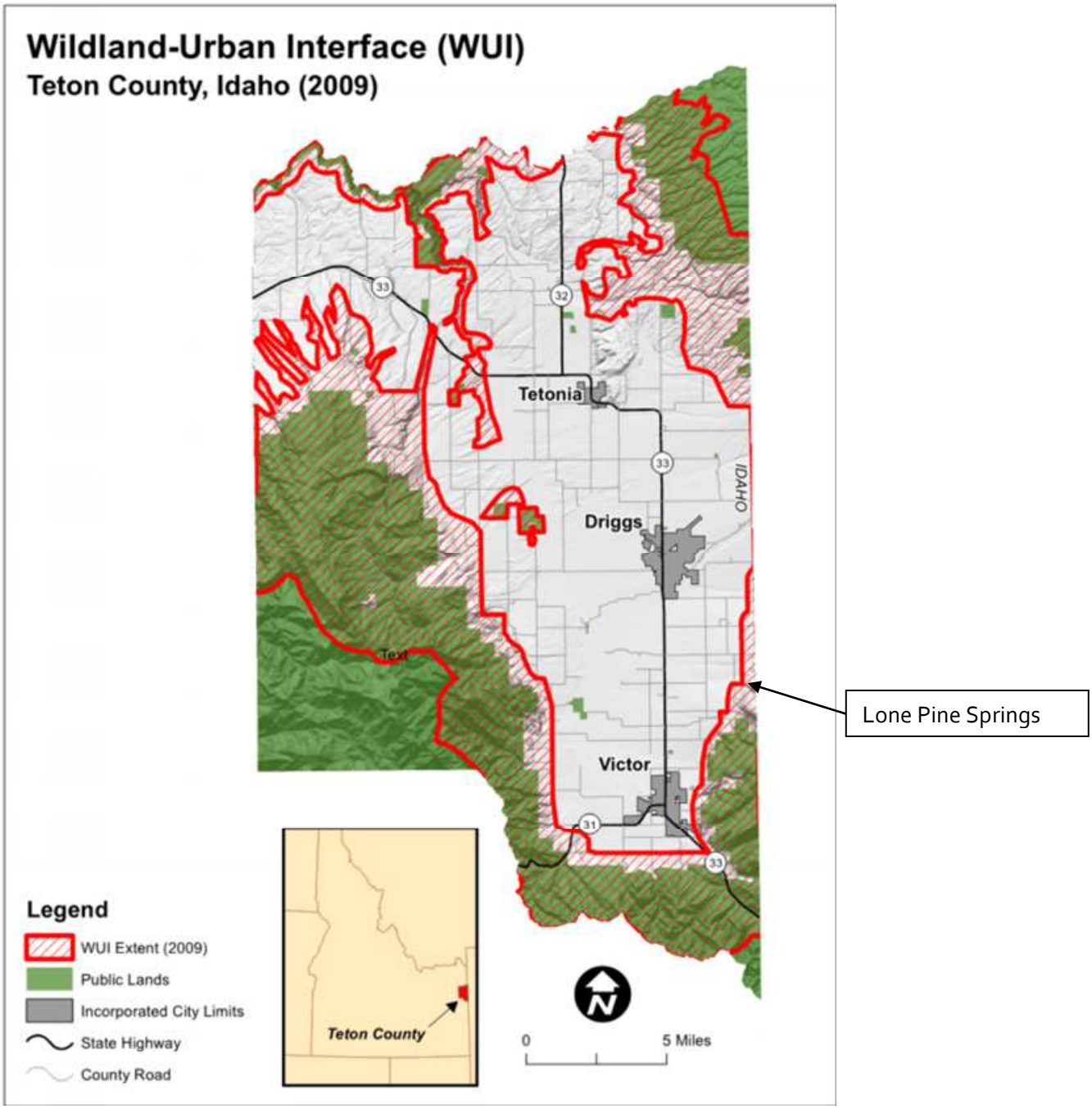
Figure 9. Lone Pine Springs Subdivision - Teton County Earthquakes 1969 - 2015



3.D.2 AREAS OF THE PROPERTY LOCATED WITHIN AN AREA OF "HIGH" OR EXTREME" WILDFIRE DANGER, AS DESIGNATED ON THE LATEST ADOPTED PLAN OF THE TETON COUNTY FIRE PROTECTION DISTRICT

The 2016 Wildfire Protection Plan is the latest adopted plan of the Teton County Fire Protection District. This plan does not designate areas of fire danger. The fire department (personal communication with Edward Schauster, Teton County Fire & Rescue Deputy Chief, 10/7/2020) emphasizes that fire danger is ever-changing based on weather, fuels, and current land management practices. The property is located within the 2009 Wildland-Urban Interface.

Figure 10. Lone Pine Springs Subdivision - Wildland-Urban Interface



VEGETATION COMMUNITIES

The proposed Lone Pine Springs Subdivision is comprised of a meadow and historically hayed pasture in the flatter, west side of the parcel. The hillside on the eastern portion of the parcel has aspen and coniferous forests, both with a dense shrub understory. The aspen and coniferous forests intermix and were mapped based on which type dominated. Several south-facing hillsides lack a forest overstory and only have shrub cover. Shrubs also extend into the meadow along the south edge of the parcel. Palustrine emergent wetlands are found along a spring creek and the springs that feed it. The parcel contains several outbuildings, driveways/parking areas, and county road 2000 E.

Table 3. Lone Pine Springs Subdivision vegetation communities

Vegetation Community	Acres	Notes
Aspen	54.7	Dense understory of serviceberry, hawthorn, and chokecherry
Coniferous forest	21.9	Dense understory of serviceberry, hawthorn, chokecherry, and snowberry
Meadow	16.5	Smooth brome dominates; weeds include mullein and musk thistle
Shrub	13.3	Primarily serviceberry, also hawthorn, chokecherry, snowberry, and occasional sage
Hayed pasture	9.9	Appears hayed on some historic aerials
Wetland	0.6	Palustrine emergent; along springs and spring creeks
Disturbed	0.4	Roads and buildings
Total	**117.3**	

Figure 11. Lone Pine Springs Subdivision - Vegetation Communities

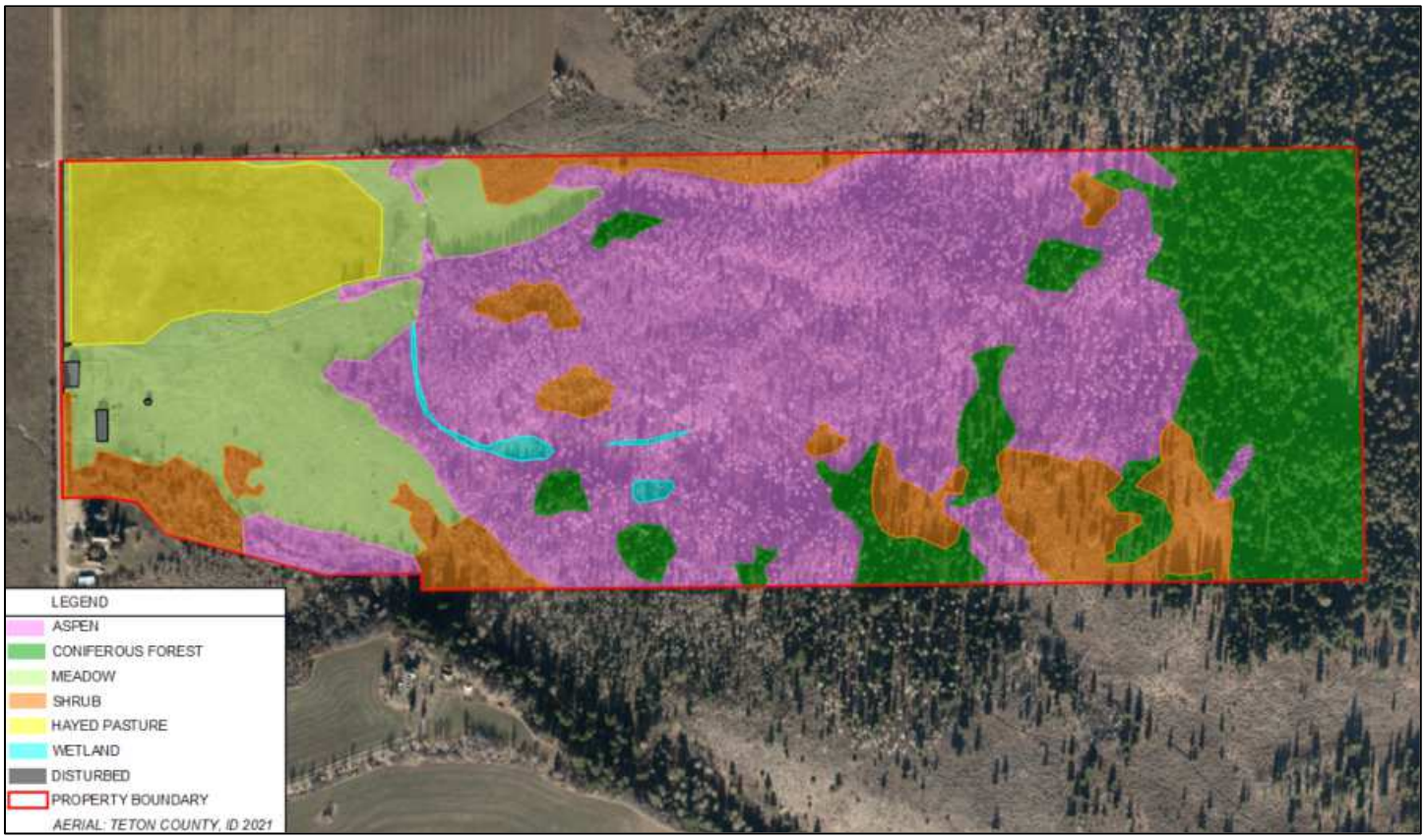


Photo 3. Vegetation – Aspen

Photo 4. Vegetation – Coniferous Forest

Photo 5. Vegetation – Meadow

Photo 6. Vegetation – Shrub

Photo 7. Vegetation – Hayed Pasture (ESRI 2017 Imagery, Teton County ID GIS Parcel Map)

Photo 8. Vegetation – Wetland

RIDGES AND ROCK OUTCROPPINGS

No major ridges or rock outcroppings are found on the property. Several small ridges and swales are present.

3.D.3 AREAS OF THE PROPERTY THAT ARE LOCATED WITHIN ONE (1) MILE OF ANY STATE HIGHWAY OR SKI HILL ROAD ARE VISIBLE FROM ANY STATE HIGHWAY OR SKI HILL ROAD.

The parcel is visible from State Highway 33, 3 miles away.

Photo 9. Lone Pine Springs – view from Hwy 33 and 4000 S

3.D.4 HILL SIDE OVERLAY

The Lone Pine Springs Subdivision is partially within the Hillside Overlay (Figure 12) and has slopes 0 – 30+% (Figure 13).

Figure 12. Lone Pine Springs Subdivision - Teton County Hillside Overlay (2004)

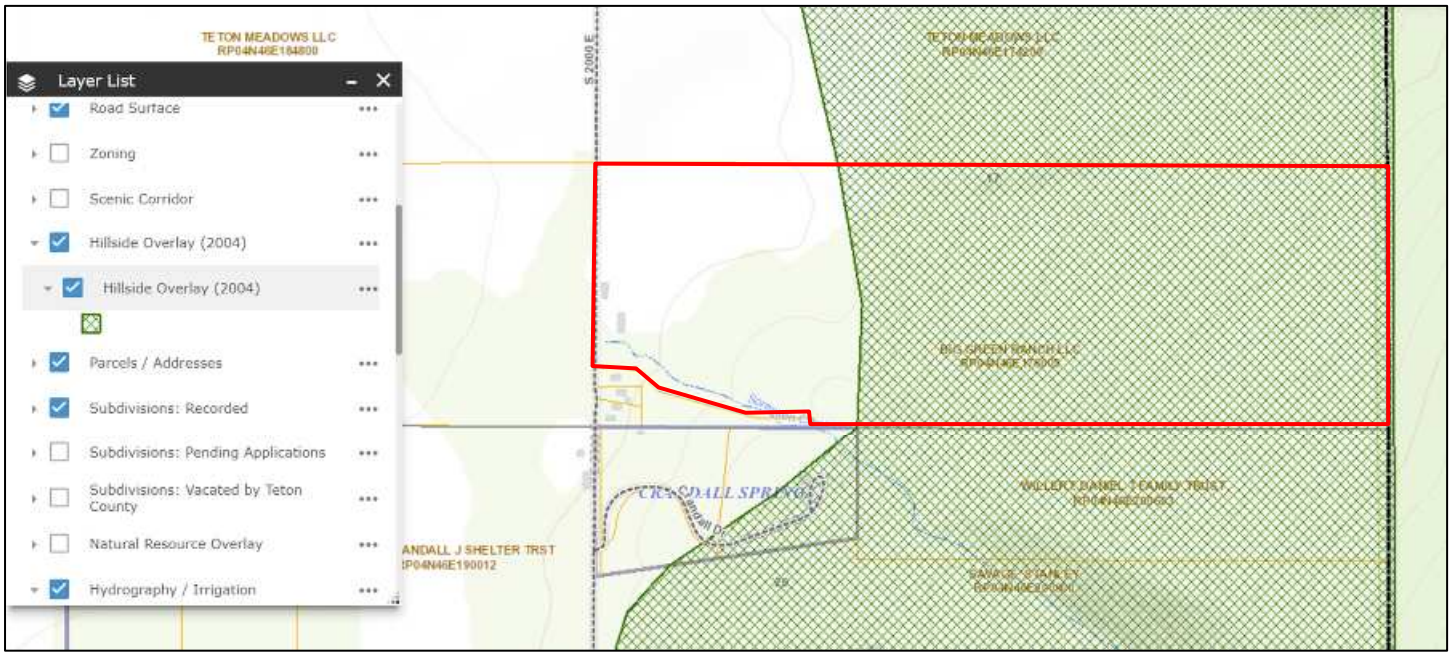
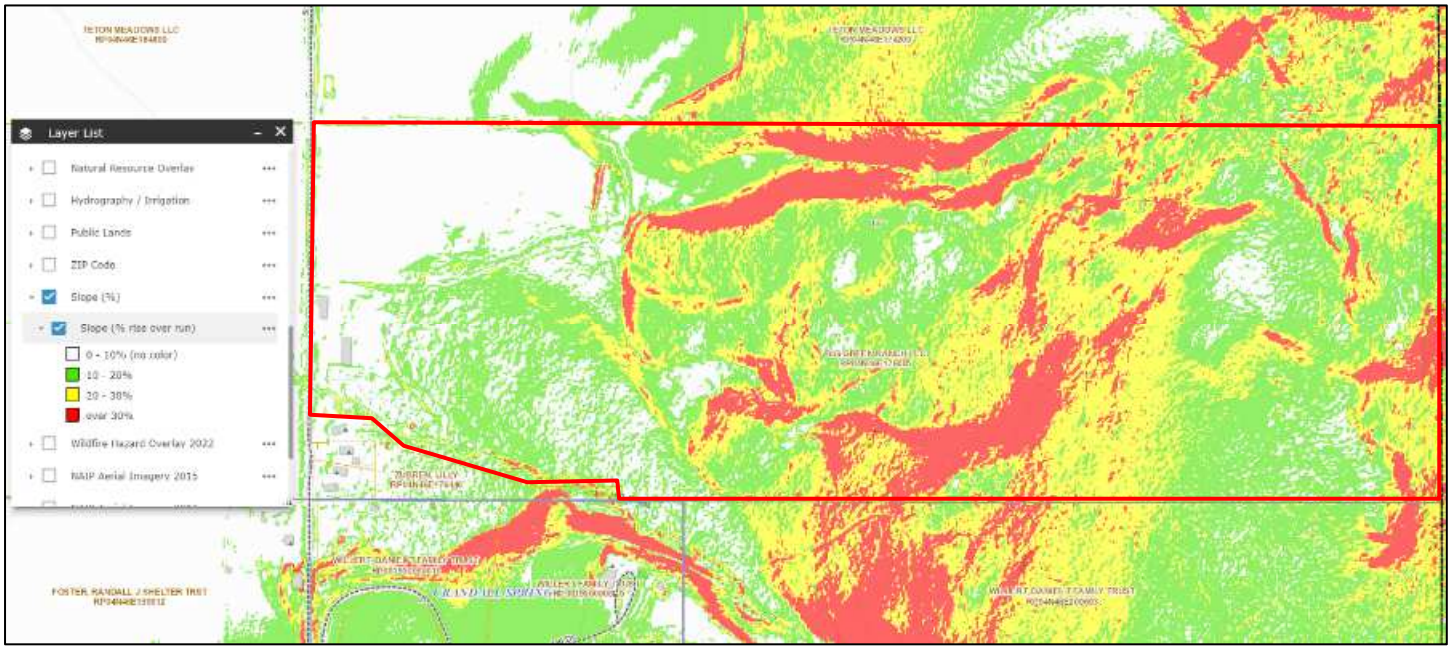


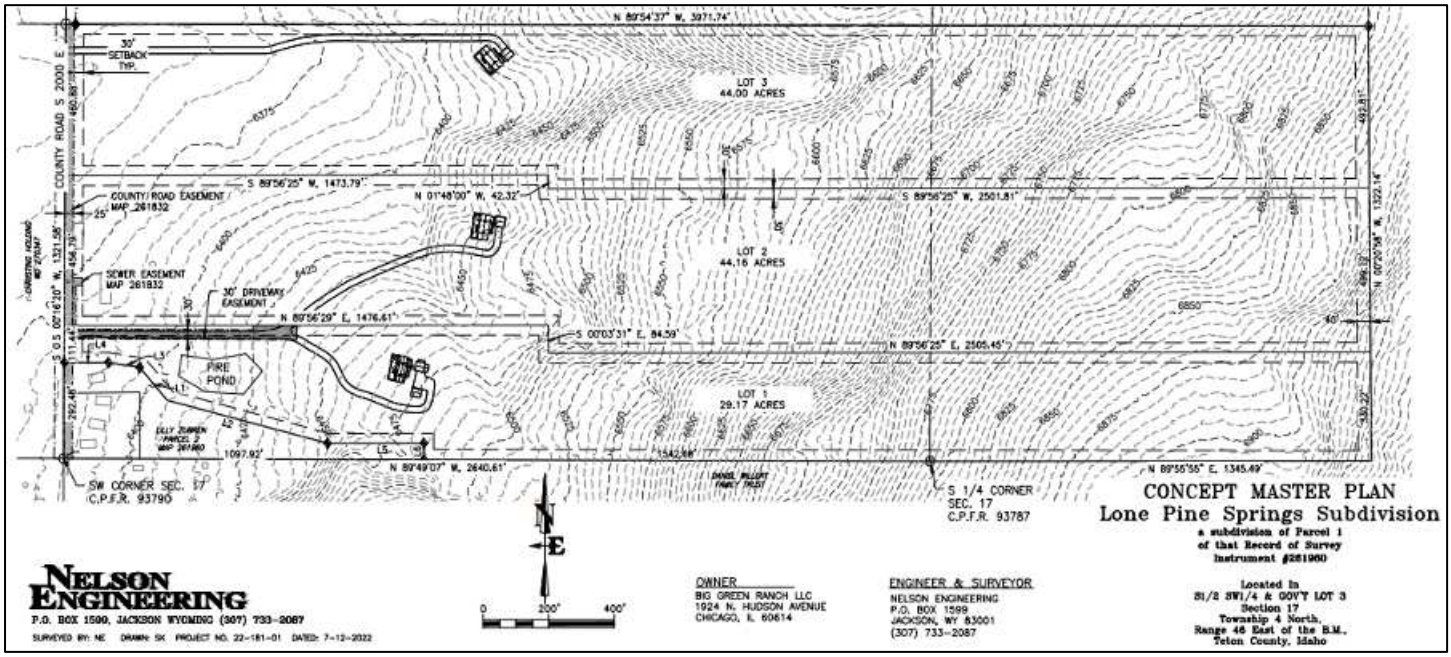
Figure 13. Lone Pine Springs Subdivision - Teton County Slope (%)



4. IMPACT ANALYSIS

The proposed Lone Pine Springs Subdivision includes subdividing a 117.3-acre parcel that contains several barns/outbuildings into three parcels of 29.17-acres. 44.00-acres, and 44.16- acres. The proposed subdivision is located in some of the richest habitat remaining on the Teton Front. Development of these parcels will negatively impact habitat currently utilized by big game and other sensitive wildlife.

Figure 14. Lone Pine Springs Subdivision – Concept Master Plan



5. SUGGESTED MITIGATION MEASURES

Low lot density (1 un./ ~40 ac.) and location of lots toward the west and away from functional hillside habitats are good initial choices for wildlife conservation. Given the landscape position and importance to many priority species and priority habitats we have further recommendations to strengthen wildlife protections on this parcel. To maintain existing habitat on the property for big game, minimize conflicts with wildlife and mitigate wildfire hazards, the proposed development should ideally follow these suggested mitigation measures and proposed building envelope configuration.

- Site all development within the meadow and hay pasture vegetation cover types and out of Priority Wildlife Habitats. This will maximize functional habitat patch size to the east and protect the highest value habitats.
- Maintain large buffers from forested and riparian areas for wildlife.
- Cluster development (buildings and roads) to minimize habitat fragmentation and wildlife disturbance.
    - Keep main buildings and accessory buildings as close together as possible to avoid building envelope sprawl and unnecessary fragmentation.
    - Consider moving the building envelop on Lot 2 further west out of Priority Habitat and closer to Lot 1 to form a cluster and minimize habitat fragmentation. Despite recommended clustering, vegetation screening could be used to effectively maintain privacy between the lots if that is a goal.
    - Consider moving Lot 3 closer to the road to maintain a larger patch of functional habitat to the east
    - Consider moving lot 1 slightly west to conserve existing shrub vegetation
- Implement strict pet containment guidelines for residential pets to avoid conflicts with wildlife

- Limit recreation in undeveloped areas to the east especially during sensitive times for wildlife like winter.
- Avoid the construction of permanent trail networks that fragment key habitats and displace wildlife
- For human safety and bear conservation ensure compliance with Teton County Idaho's Bear Conflict Mitigation and Prevention measures (Title 4, Chapter 7).

Figure 15. Lone Pine Springs Subdivision Proposed Building Envelopes