



**WESTERN  
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February 18, 2016

Willy Powell  
Town of Minturn  
P.O. Box 309  
Minturn, CO 81645

RE: Minturn Segment GIS Maps and Shapefiles

Dear Willy,

In accordance with our scope of work for the Minturn Trail Segment we have prepared the attached GIS-based resource maps of wildlife habitats in the proposed trail work area (Figure 1). In addition, we are providing the GIS shapefiles used to create the wildlife habitat maps. Finally, we are providing the boundaries of wetlands and aquatic habitats mapped along Game Creek as GIS shapefiles.

**Wildlife Habitat Maps**

Colorado Parks and Wildlife (CPW) species habitat mapping was accessed through ESRI's online GIS server and overlaid with the trail project area to determine the species of concern. Based on this analysis and the presence of key habitat types in the area, habitat maps were developed for two big game species, American elk and mule deer; for mountain lions; and for Canada lynx, a federally listed Threatened species. Each map is briefly described below.

Figure 2 illustrates the boundaries of important American elk (*Cervus elaphus*) habitats in the vicinity of the proposed trail. As illustrated by Figure 2, the vicinity of the trail includes winter range, severe winter range, and winter concentration areas. The central portion of the proposed trail would cross a portion of the severe winter range and winter concentration area for a distance of approximately 3,700 feet. The entire area shown by the figure is mapped as elk summer range. There are no mapped migration corridors for elk in the vicinity of the proposed trail.

Figure 3 illustrates the CPW habitat types for mule deer (*Odocoileus hemionus*) in the vicinity of the proposed Minturn Trail segment. As shown by the figure, the proposed trail would not encroach on the concentration area for mule deer, which is located at higher elevations on the slope above. A migration corridor is located on Interstate 70 just east of Dowds Junction, and the area of Dowds Junction extending east toward Vail is a mapped highway crossing. The entire area shown by the map is within the summer range and overall range for mule deer.

Habitat mapping for Canada lynx (*Lynx canadensis*) is based on the White River National Forest maps available from ESRI's online server. As shown by Figure 4, the proposed trail would be confined either to disturbed areas on private lands, which were not mapped, or to areas mapped as non-habitat. The trail would not cross any of the other habitat types identified for lynx.

Mountain lion (*Felis concolor*) habitats identified by CPW are illustrated on Figure 5. The entire area shown by the figure is within the overall range for mountain lions. In addition, the proposed trail is located within an identified Human Conflict Area. No other habitat types for mountain lions are mapped within the project area.

#### Wetland Map

We have also attached shapefiles for the limits of the Game Creek Wetland and the Game Creek Aquatic Habitat, which are illustrated on Figure 6. We converted the wetland survey data from the Wetland Delineation Report for the Minturn Segment from AutoCAD to GIS to create the shapefiles.

Please let us know if you have questions or if you would like any additional shapefiles for the project area.

Sincerely,

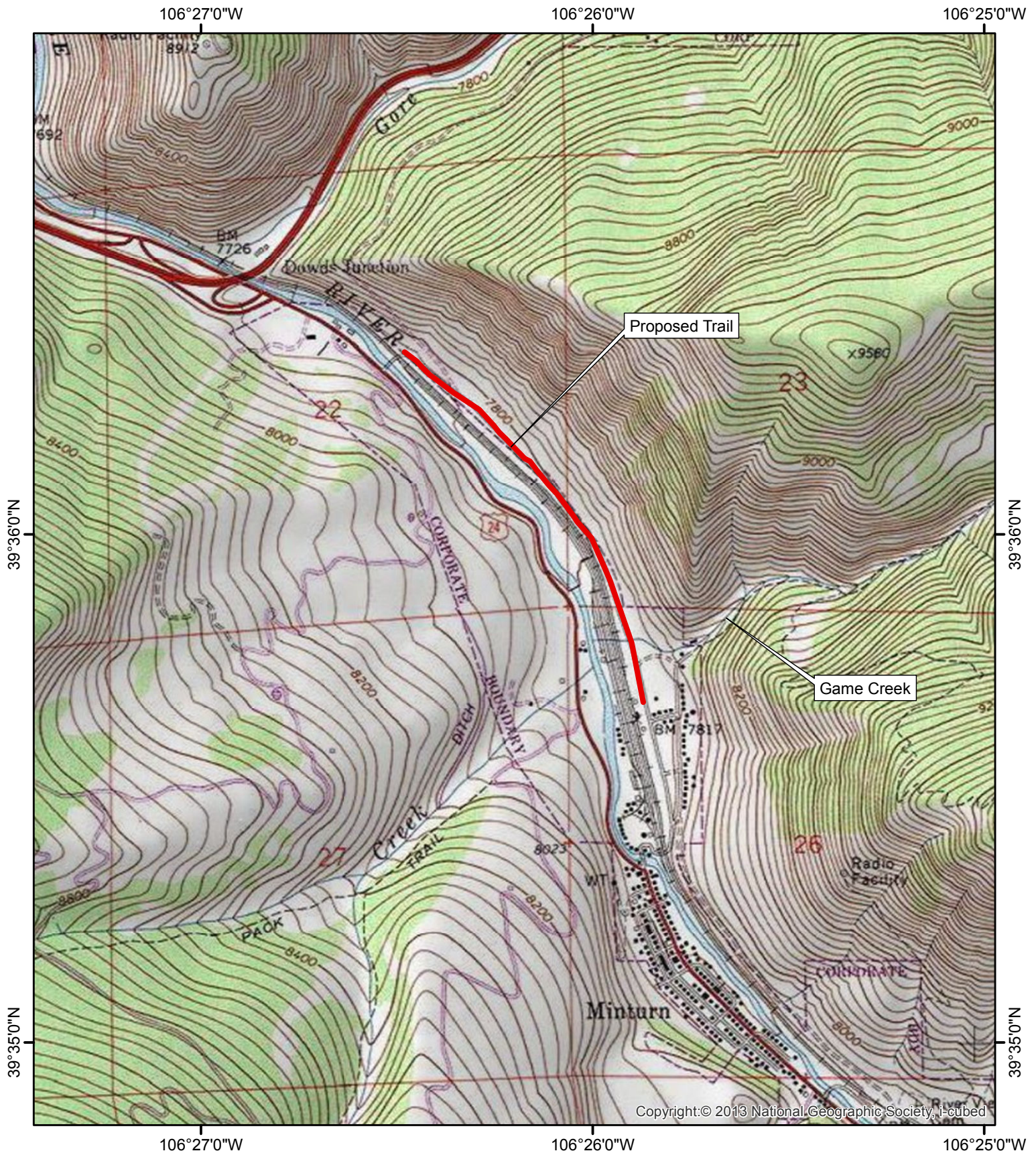


Heather Houston  
Ecologist

Enclosures

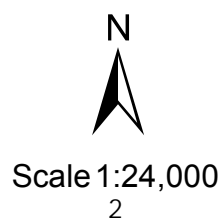
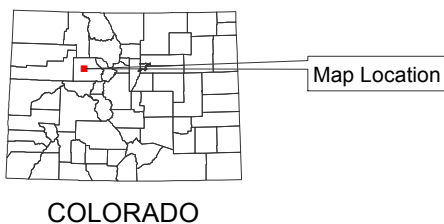
CC: Ellie Caryl, ECO Trails  
Jeff Spanel, Inter-Mountain Engineering  
Jim Kunkel, Inter-Mountain Engineering





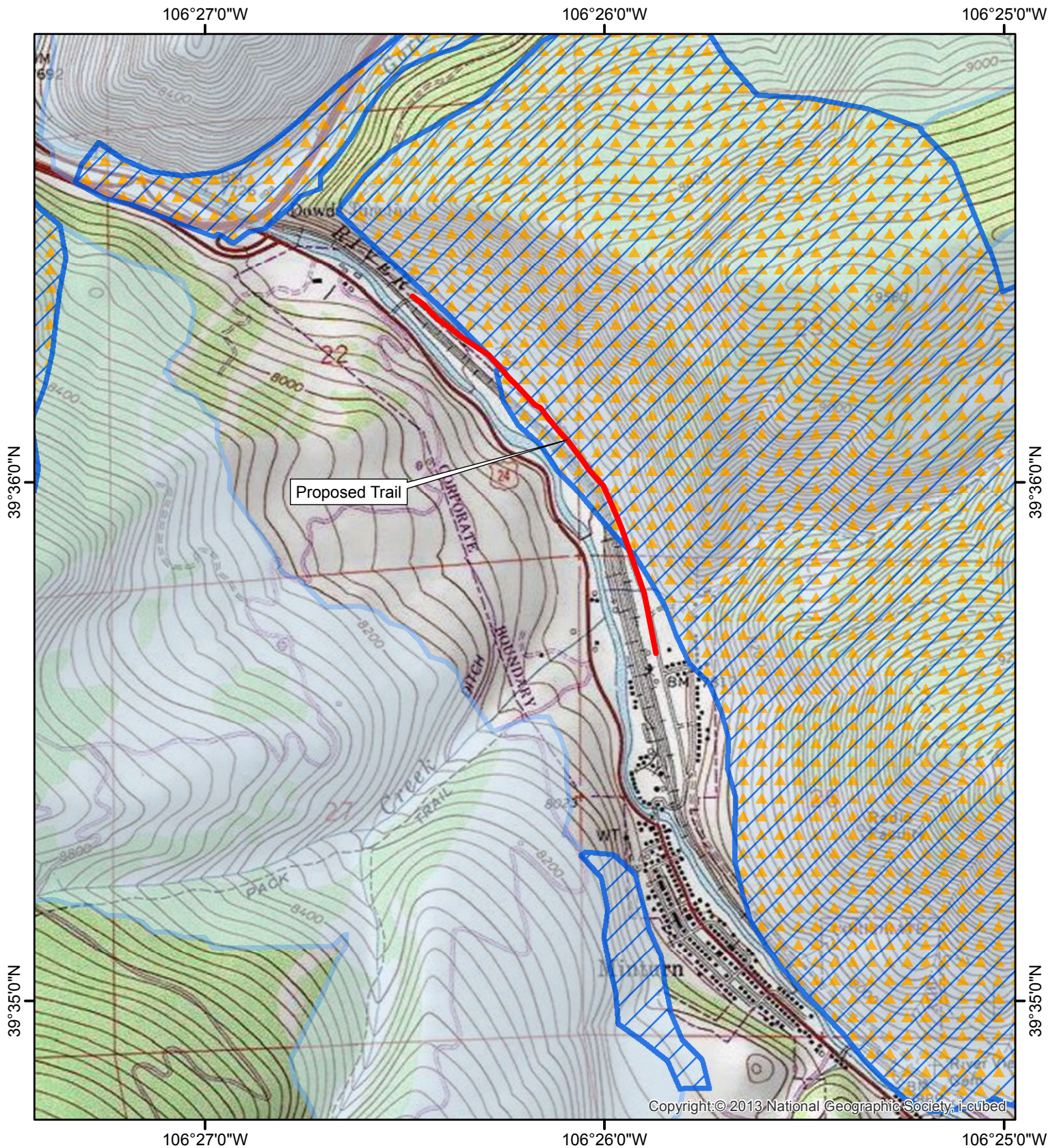
BASE: USGS 7.5' Minturn Quadrangle, Colorado

**Figure 1. Project Location Map  
ECO Trails - Minturn Segment**







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BASE: USGS 7.5' Minturn Quadrangle, Colorado

### Legend

-  Winter Range
-  Severe Winter Range
-  Winter Concentration Area
-  Proposed Trail

SOURCE: Colorado Parks & Wildlife



Scale 1:24,000

**Figure 2. American Elk Habitat Map  
ECO Trails - Minturn Segment**

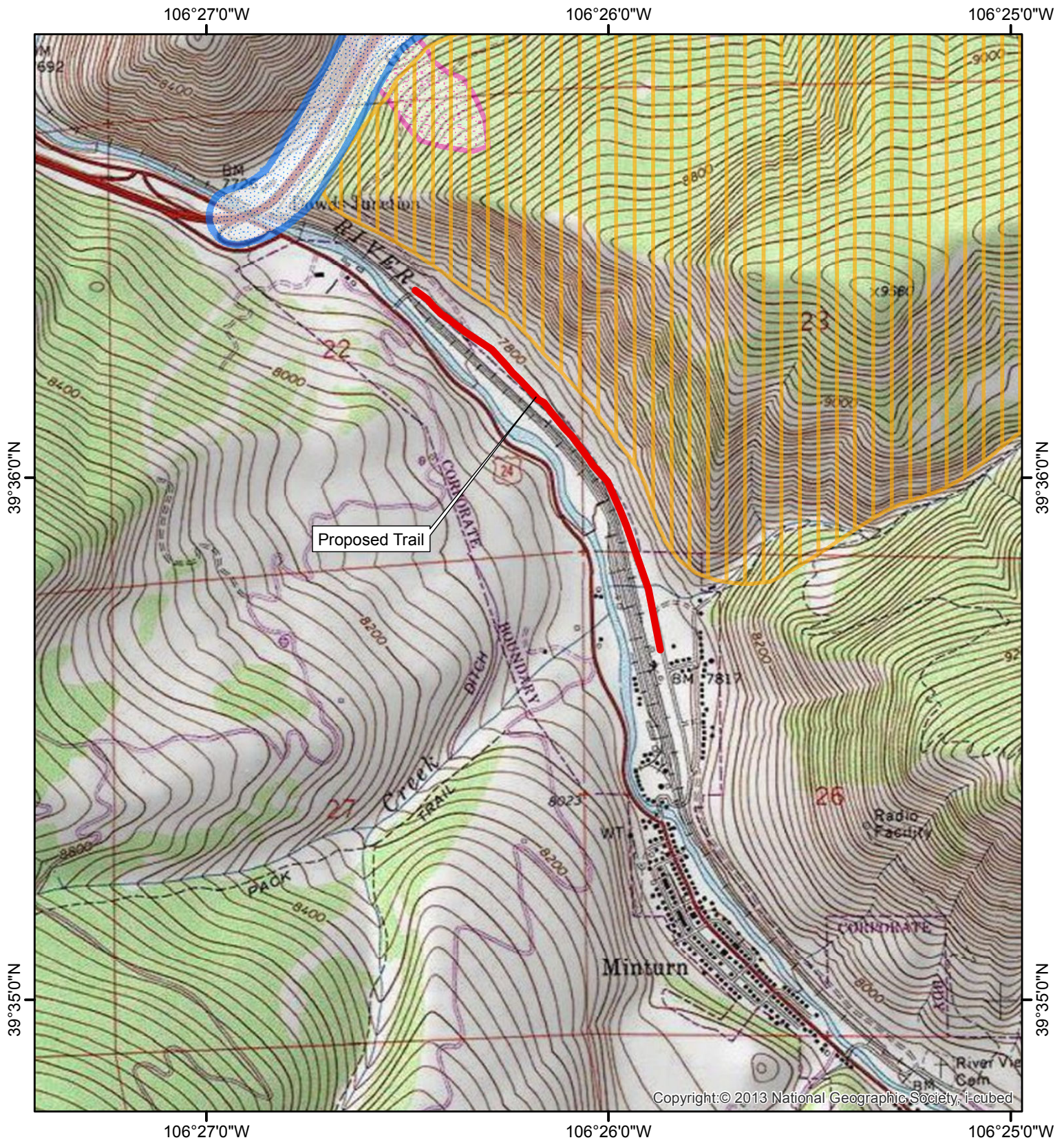
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BASE: USGS 7.5' Minturn Quadrangle, Colorado

### Legend

-  Concentration Area
-  Migration Corridors
-  Highway Crossing
-  Proposed Trail

SOURCE: Colorado Parks & Wildlife



Scale 1:24,000

**Figure 3. Mule Deer Habitat Map  
ECO Trails - Minturn Segment**

prepared by:

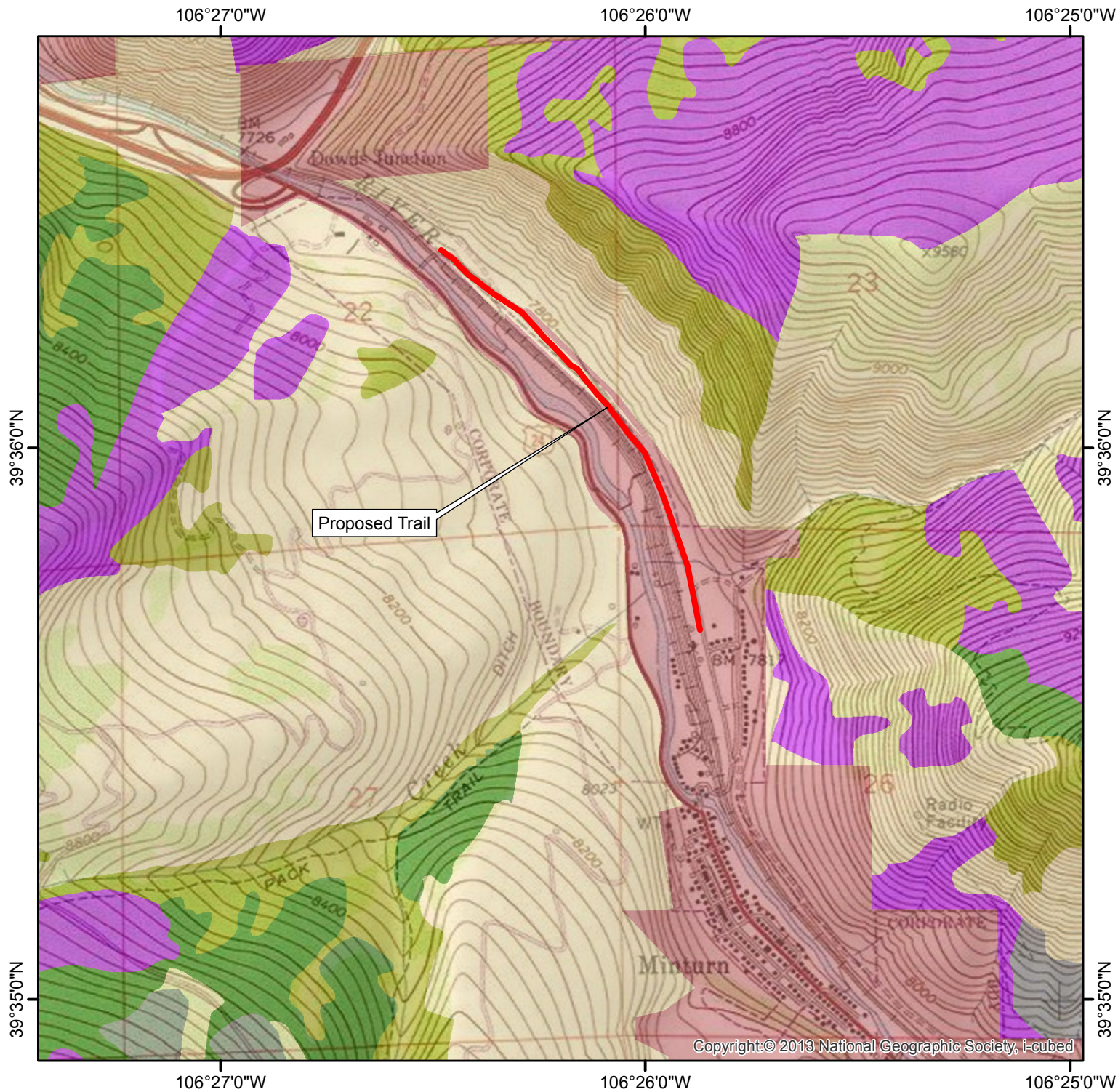
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BASE: USGS 7.5' Minturn Quadrangle, Colorado

**Figure 4. Lynx Habitat Map  
ECO Trails - Minturn Segment**

**Legend**

**Lynx Habitat Types**

- Denning
- Non-Habitat
- Other
- Private
- Unsuitable
- Winter

Proposed Trail



Scale 1:24,000

SOURCE: U.S. Forest Service WRNF Lynx Habitat Map

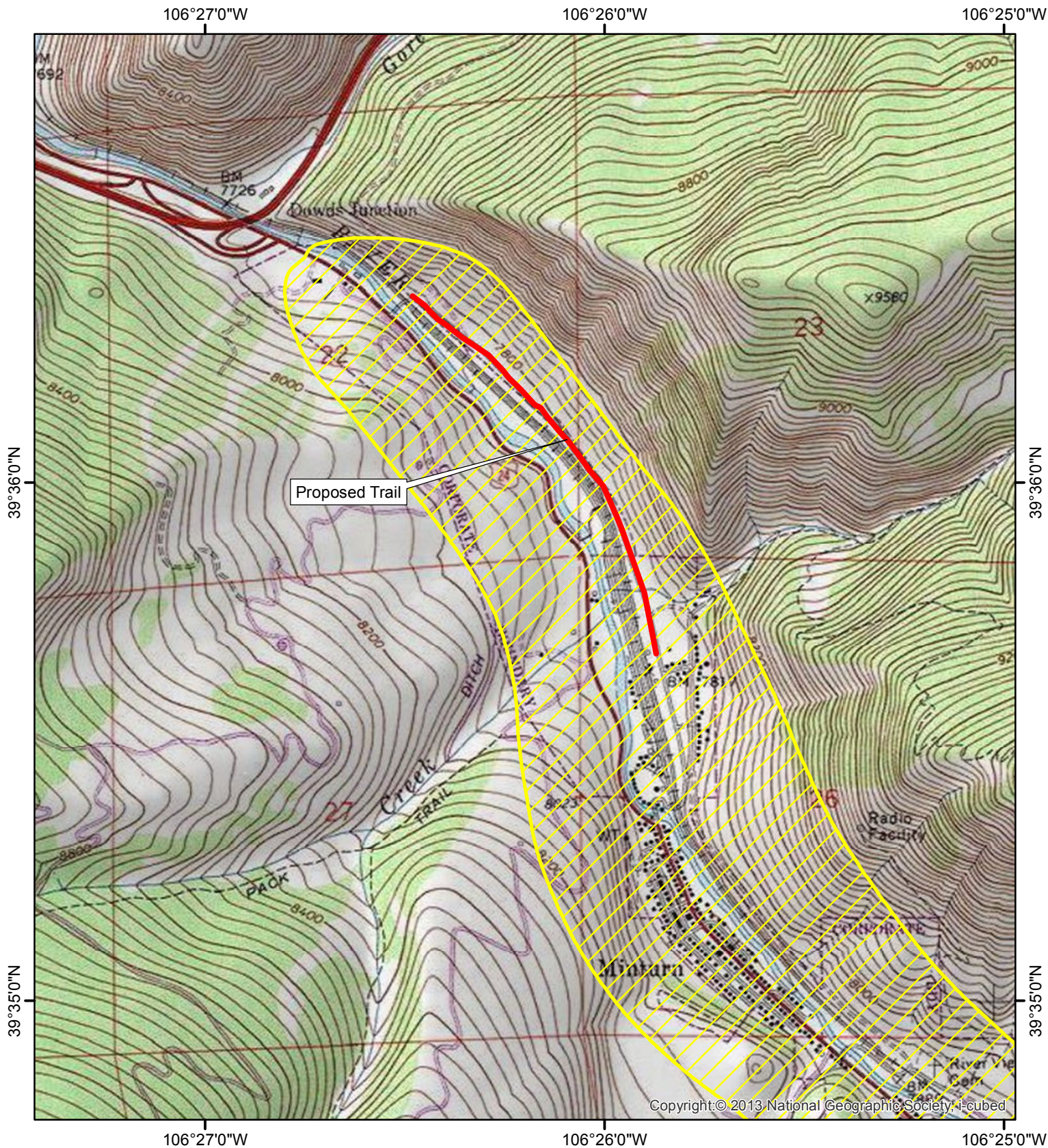
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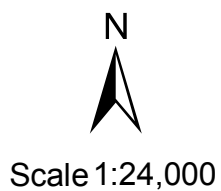


BASE: USGS 7.5' Minturn Quadrangle, Colorado

### Legend

-  Human Conflict Area
-  Proposed Trail

SOURCE: Colorado Parks & Wildlife



**Figure 5. Mountain Lion Habitat Map  
ECO Trails - Minturn Segment**

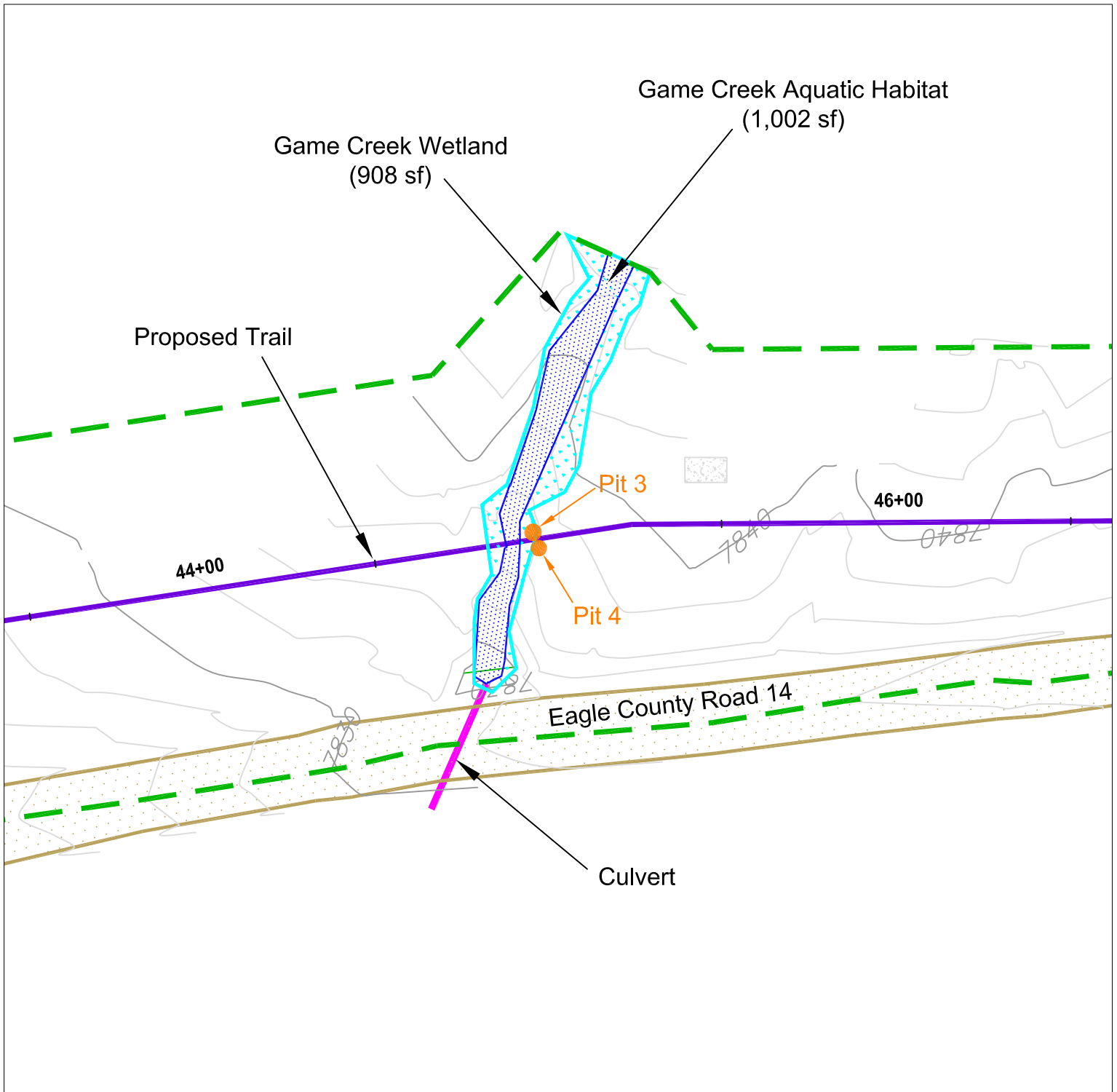
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**Legend:**

- Wetlands
- Aquatic Habitat
- Pit 1 Soil Pits
- Wetland Delineation Boundary
- Proposed Trail



Date: January 2016  
 Contour Interval: 2 ft  
 Scale: 1 in = 40 ft

**Figure 6. Game Creek Wetland Detail  
 Minturn Trail Segment  
 ECO Trails Project**