

## SEPA ENVIRONMENTAL CHECKLIST

### ***Purpose of checklist:***

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

### ***Instructions for applicants:***

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

### ***Instructions for Lead Agencies:***

Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

### ***Use of checklist for nonproject proposals:***

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

### ***A. Background***

1. Name of proposed project, if applicable:

- Wheeler Ridge, LLC Proposed Orchard Development & Wildlife Habitat Enhancements

2. Name of applicant:

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- Ben Alworth, Wheeler Ridge, LLC

3. Address and phone number of applicant and contact person:

- 4597 Stemilt Hill Road, Wenatchee, WA
- 509-662-3613

4. Date checklist prepared:

- October 2<sup>nd</sup>, 2018

5. Agency requesting checklist:

- Chelan County Community Development Department
- Washington State Department of Natural Resources
- Washington State Department of Ecology

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6. Proposed timing or schedule (including phasing, if applicable):

- Wheeler Ridge, LLC is proposing to convert 250 acres within 640 acres of a historical working forest to orchard development located on Wheeler Ridge, Chelan County (Figure 1).

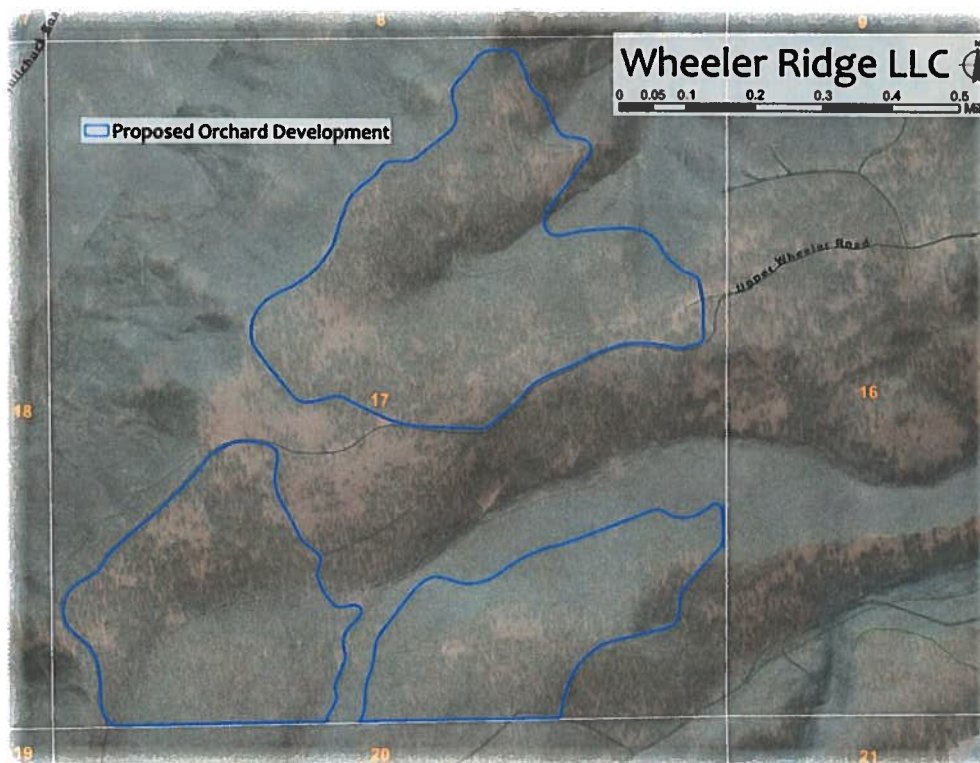


Figure 1. Proposed 250 Acres of Orchard Development, Wheeler Ridge, Chelan County.

- Subsequent forest thinning may occur in the future, which would require an additional FPA permit.
- If orchards are successful at producing fruit, Wheeler Ridge, LLC may pursue future development of an additional 110 acres on Section 16 or Section 21.

Estimated Project Timeline:

- October 2018 Submit SEPA Checklist for agency review and public comment
- Fall 2018 Coordination and estimated start
- July 2023 Potential (Future) 110 acres of orchard development

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

- Yes. If the 250 acres are successful at producing fruit, Wheeler Ridge, LLC will submit subsequent SEPA documents, a Forest Practices Act permit and comply with other applicable local, state, and federal rules, regulations, and permits to evaluate converting 110 acres of forest lands on Section 16 or Section 21 to orchard development.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

- Stemilt and Forest Stewardship Plan. 2015. Schelhass Forestry, LLC.
- Slope Stability Reconnaissance. 2017. Aspect Consulting.
- Predicting Summer Elk Habitat Potential on Section 17, Wheeler Ridge. Technical Memo. 2018. SCJ Alliance.
- Forty Years of Elk Observations. Section 17 and Section 16. 2018. Steve Shiflett.
- Northern Spotted Owl Activity Center Assessment and Subsequent Surveys on Section 17. 2018. Washington Conservation Science.
- Critical Area Report and Wildlife Habitat Mapping and Management Plan – Wetland Delineation and Wetland Ratings Forms. 2018. SCJ Alliance.
- Surface Water Quality-Quantity Characteristics. 2018. Four Peaks.
- Cultural Resource Investigation. 2016 & 2018. Cultural Resource Consultants.
- Section 16 and 17 Upper Wheeler Road Reconnaissance and Planning-Level Geotechnical Consideration. 2018. Aspect Consulting.
- Wheeler Ridge Orchards – Trip Generation Analysis and Traffic Impact Review. Technical Memo. 2018. SCJ Alliance.
- Appraisal Report of Proposed Exchange Sites in Section 16 & 21, NNA Wheeler Rd & Stemilt Loop Rd, Wenatchee, WA 98801. Pacific Appraisal Associates, PLLC.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

- In 2014, Washington State Department of Fish and Wildlife (WDFW) and Washington State Department of Natural Resource (WDNR) issued a State Environmental Policy Act (SEPA) Determination of Nonsignificance (DNS) for the Naneum Ridge to Columbia Ridge Recreation and Access Plan within the Naneum Ridge State Forest, Colockum Wildlife Area, and the Quilomene and Whisky Dick Wildlife Units.

WDFW is in the process of developing a green dot road management plan and is pursuing the construction of a parking lot to accomplish objectives of the Naneum Ridge to Columbia River Recreation and Access Plan (DNS 18-036). WDFW concluded road closures reduce disturbance to wildlife and that restoring user-built roads back to habitat will increase forage and escapement for wildlife, therefore issued a project specific DNS (2018). The Colockum Wildlife Area is adjacent to the proposed orchard development.

- The Stemilt-Squilchuck Recreation Draft Plan (2018) is being developed by interested stakeholders and is being facilitated by the Chelan County Natural Resources Department. WDFW provided technical guidance and "critical evaluation of impacts of recreation" to wildlife. The geographical scope of the Plan includes the various landownerships in the Upper Stemilt and Squilchuck watersheds. Recreational actions are primarily proposed to occur on WDFW and Chelan County lands adjacent to the proposed orchard development. Recreational elements in the Plan include providing recreational access and opportunities within the Wheeler Ridge, LLC proposed project area. Wheeler Ridge, LLC is not contemplating recreational access and/or opportunities as an element of the proposed project area to avoid recreational impacts to habitat, elk, and other wildlife. Actions proposed in the Recreation Plan that may affect this proposal are unknown. The Plan ensures impacts to fish, wildlife, and their habitat associated with these enhanced uses will be avoided, reduced or mitigated by WDFW with special attention given to the Colockum elk herd and Northern spotted owl.
- Tamarack Saddle, LLC & Mission Ridge Ski and Board Resort have proposed a Master Planned Resort expansion to the existing Mission Ridge Planned Development to provide 613 condominiums, townhouses and duplexes, 260 single-family dwellings, 89,222 square feet of commercial spaces, a 50-room lodge facility and all associated infrastructure developed through five phases. This proposed Master Plan is located north west of the proposed Wheeler Ridge, LLC proposed orchard development. It is unknown at this time how the proposed project plan will directly or indirectly impact the Wheeler Ridge, LLC proposed project and operations.
- There are no other known pending governmental approvals or other proposals directly affecting this project. Additional approval from Chelan County Public Works (i.e. right-of-way/franchise agreement to improve the road) and Chelan County PUD approval for utilities.

10. List any government approvals or permits that will be needed for your proposal, if known.

- Forest Practices Application (Permit)
- Hydraulic Project Approval/Joint Aquatic Resource Permit Application
- County Shorelines Management Act Permit (Shoreline Substantial Development and/or Exemption; Riparian Variance)
- Critical Areas Review & Wildlife Mapping and Habitat Management Plan – Wetland Delineation and Wetland Ratings Forms
- Construction Storm Water General Permit
- Storm Water Pollution Prevention Plan
- County Public Works Permit for Road Activities/Improvements within Right-of-Way
- Chelan County Utility Franchise Agreement – Lower Stemilt Irrigation District Addition
- Chelan County Building Permit
- WDNR Road Maintenance and Abandonment Plans

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11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

- In 2017, Chelan County Natural Resource Department and later Chelan County Community Development Department disagreed with WDNRs issuance of a SEPA DNS regarding the Wheeler Ridge, LLC Forest Practice Application permit request. Per consultation with the Chelan County Community Development Department which serves as the SEPA Responsible Official per their Forest Practices Act (FPA) Authority, Wheeler Ridge, LLC withdrew their FPA and supporting SEPA checklist to develop a comprehensive orchard development plan to address comments received during the 2017 SEPA scoping period and to conduct additional studies.
- Wheeler Ridge, LLC proposes to convert a historical working forest to irrigated agriculture of long-term commercial significance. It is estimated short-term construction will contribute \$10 million-dollars to the local economy and within the state of Washington and long-term operations/harvest of fruit will contribute \$10 million-dollars annually to local and state economies. All orchard development will be within the project area footprint. Orchard development includes harvesting timber from a historical working forest, orchard planting, a 9.9-acre-foot reservoir, seasonal agricultural worker support facilities, and other necessary structures such as fuel stations and spray sheds.
- Elements of the project outside the orchard development footprint, but within Section 17 include: Habitat enhancements, wetland-meadow habitat protection and restoration, seasonal water conveyance for the perennial streams in spring and summer months for wildlife, restoration of natural drainage patterns, removal of user-built roads, habitat restoration of illegal dispersed camping sites, and long-term protection of forest tree stands along wildlife corridors and roads where feasible.
- *Project Elements:*
  - Convert 250 acres within a 640-acre historical working forest for orchard development.
  - Remove additional timber on road and utility easements on Section 16 within an existing easement.
  - Develop a 9.9-acre-foot reservoir.
  - Preserve an estimated 390 acres of forest habitat for wildlife and erosion control.
  - In consultation with permitting agencies, protect and enhance an estimated 48 acres of wetland-meadow and other habitats by revegetating user-built roads and illegal dispersed camping sites with native flora.
  - In consultation with permitting agencies, use an underground pipe to convey an estimated 100 linear yards of seasonal streams to improve flows in the perennial stream. Seasonal stream and swale are currently within a heavily incised channel which transport sediments to the perennial stream and wetland complex; reduce sediment transport with a sediment catch-basin and revegetate with native flora to reduce erosion as necessary.
  - Restrict public access to reduce disturbance to wildlife and protect newly, restored habitat areas, and future habitat degradation.
  - Establish wildlife areas to provide foraging and wetland meadow habitats, and access to large, connected adjacent habitats protected for elk<sup>1</sup> and other wildlife (i.e. Section 16).
  - In consultation with permitting agencies, install habitat protection signs as necessary.
  - Provide a seasonal source of water to the existing perennial stream throughout the spring and summer for elk and other wildlife; the seasonal stream typically goes dry by late May.

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<sup>1</sup> Lands acquired under the Cooperative Endangered Species Conservation Fund are required to be managed for the benefit of the species for which the lands were purchased.



- Installation of 8-foot deer fence around the orchard development.
  - Improvement of 2.3 miles of an existing Chelan County Road and relocation of ¼ of a mile (Section 16 and Section 17).
  - Non-commercial thinning to reduce fire danger, risk of tree disease/insect infestation, and provide open forage habitat for elk and other wildlife.
  - Provide infrastructure (i.e. utilities) and road improvements within existing WDNR easement on Section 16. Remove additional timber on road and utility easements on Section 16.
- ***Future Phase ONLY if Phase 1 is successful at producing fruit (would require subsequent SEPA, FPA, and compliance with other necessary local, state and federal rules, regulations, and permits):***
    - Optional 100-acre-foot reservoir on Section 21<sup>2</sup>.
    - Optional pipe to Section 21 reservoir.
    - In consultation with WDFW:
      - Exchange 218 acres of land on Section 21<sup>3</sup> to WDFW to provides linkage to the Colockum Wildlife Area and promote movement between habitat concentration areas in exchange for 160 acres on Section 16
      - Develop 110 acres of the 160 acres for orchard<sup>4</sup> development on Section 16; protect 50 acres of forested habitat
      - Without land exchange with WDFW, develop 110 acres of orchard development on Section 21.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

- Phase 1 Proposal Location (Figure 2):

- The proposed project is located on Wheeler Ridge, within the Stemilt Basin, Chelan County, Washington State.
- The project is located on private property owned by Wheeler Ridge, LLC at Township 21N; Range 20 EW; Section 17 and totals 640 acres. The geographic ID is 212017000000 and is not designated as Open Space, Historic Property, or Multi-Family Redevelopment. The Land use Code is 88 and the Owner ID is 96173.
- Mailing Address: 4597 Stemilt Hill Road, Wenatchee, WA
- Existing Section 16 Utility Easement is located adjacent to Section 17 and is owned by WDFW; Township 21N; Range 20 EW; Section 16. The geographic ID is 212016000000 and is not designated open space.



**Figure 2.** Section 17 and adjacent Sections, Wheeler Ridge, LLC Vicinity Map.

<sup>2</sup> Wheeler Ridge, LLC is only proposing a 100 acre-foot reservoir but will construct a larger reservoir if it will help local water districts with water storage needs; would require a cost share from beneficiaries for the additional 200 acre-feet.

<sup>3</sup> Section 21 218 acres appraised at \$501,000 and Section 16 160 acres appraised at \$384,99 (Pacific Appraisal Associates, 2018).

<sup>4</sup> Wheeler Ridge would prefer to develop Section 16 which is owned by WDFW because it is connected to adjacent orchards; Section 21 provides landscape connectivity for elk and other wildlife.

## **B. Environmental Elements**

### **1. Earth**

#### **a. General description of the site:**

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other \_\_\_\_\_

#### **b. What is the steepest slope on the site (approximate percent slope)?**

- 45% is steepest slope within the proposed, project site and will not be developed.

#### **c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.**

- General
  - Sterilt silt loam, 0-25 % slopes (39.9%)
  - Sterilt silt loam, 25 to 45% slopes (60.1%)
- Agricultural Land of Long-Term Commercial Significance
  - The proposed orchard development is in an area designated by the Nature Resources Conservation Service as "*Farmland of Statewide Importance*" to meet the Nation's short- and long-range needs for food and fiber.
  - It is estimated short-term construction will contribute \$10 million-dollars to the local economy and within the state of Washington.
  - It is estimated long-term operations/harvest of fruit will contribute \$10 million-dollars annually to local and state economies.

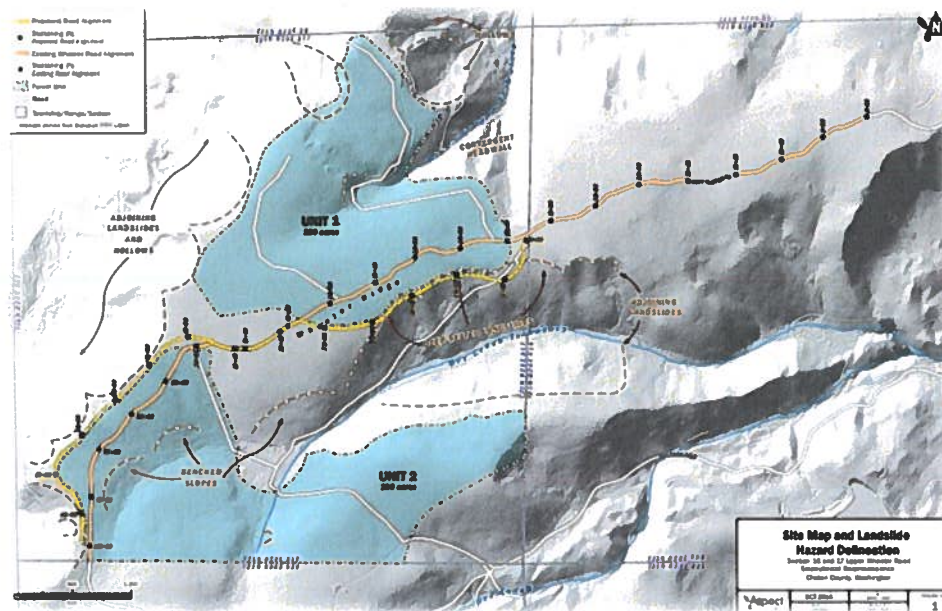
#### **d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.**

- Yes. Chelan County GeoHazards GIS database indicates there are indicators of unstable slopes within the proposed project area.
- Aspect Consulting completed a desk study and site reconnaissance to observe and delineate geological hazards. The site shows signs of past slope instability from natural processes. Past failures were observed on slopes of 20 degrees and greater within the geologic unit mapped as mass-wasting deposits. Areas where evidence of past slope instability was observed include the northeastern corner of Section 17, northwestern third of Section 17, and Orr Creek Tributary (Figure 3). The primary mechanism for slope failure within the proposed project area is over steepening of sidewalls resulting from long-term drainage incision. No active or recent slope failures were observed.

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**Figure 3. Existing and proposed road alignment and slope stability identification - verification (Aspect Consulting, 2018).**

- e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.
  - An estimated 2 miles of Chelan County Road will be improved by grading and adding base rock and top course gravel. Of the 2 miles of improved road, an estimated  $\frac{3}{4}$  of a mile will be relocated. Source of rock and gravel will come from local sources.
  - An estimated .09 - 1.0 mile of infrastructure and primitive road maintenance will occur within an existing WDNR easement on Section 16 that may include tree removal, grading, and graveling; easement has been transferred to WDFW.
  - An additional WDNR – (WDFW) easement authorizes a 20 foot width utility corridor for power and water infrastructure.
  - Smaller internal orchard roads and loading/staging areas will require grading and occur within the fenced orchard development.
- f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.
  - The possibility of erosion is minor but is expected to subside once orchard trees are planted. Throughout orchard development, including road improvements appropriate short-term and long-term erosion Best Management Practices (BMPs) will be implemented.
  - In consultation with permitting agencies, areas disturbed in the short-term will be revegetated with appropriate, native vegetation to stabilize and control erosion potential and maximize wildlife benefits and habitat.
- g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?
  - Less than 1% of the site will be covered with impervious surfaces.
- h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:



- Throughout orchard development, including road improvements appropriate erosion Best Management Practices (BMPs) will be implemented. BMPs will be developed based on technical guidance provided in the Washington State Department of Ecology Stormwater Management Manual for Eastern Washington.
- Clearing of native landcover will be minimized on slopes 20 degrees or greater. Where timber must be harvested to support orchard development, native grass, shrub, and soil will be maintained to minimize runoff, erosion, and subsurface infiltration.
- During road improvements, BMPs will be used for drainage to minimize saturation of soils on steep slopes and erosion. Roadside drainage will be designed on the uphill side with properly sized culverts to maintain natural drainages.
- Of the 640 forested acres located on Section 17, 390 will remain in forest to reduce erosion and provide canopy cover and forage for an array of wildlife in all months.
- In consultation with permitting agencies, an estimated 48 acres currently impacted by illegal, user-built roads, mud bogging, dispersed camping, and relic logging roads will be revegetated with appropriate, native vegetation to reduce impacts to the earth and erosion potential.

## 2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

- Minor emissions during the use of heavy equipment would occur during tree removal, road activities, and during construction.
- Minor emissions during annual orchard operations.
- Emissions of orchard spray during operations per permit requirements.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

- No.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

- Machinery will be turned-off when not in use.
- A proportion of the agricultural workforce live on-site or near-by in existing seasonal agricultural worker housing. Orchard staff carpool to and from the site when possible and/or transportation may be provided by Wheeler Ridge, LLC to reduce or control emissions. Fruit is hand-picked by employees.
- All required spray applications will comply with regulations.

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## 3. Water

a. Surface Water:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

- The Stemilt Creek watershed and the Squilchuck Creek watershed are within the proposed project area. Both watersheds drain to the mid-Columbia River about 6.5 miles north of Section 17.
- Orr Creek is located on Section 20 below the proposed project footprint and on the southern portion of Section 16.
- The one perennial stream located within the proposed project area typically goes dry in May. An element of this project is to provide seasonal water to the perennial stream area during spring and summer months for elk and other wildlife. Two seasonal streams located north that drain into the perennial stream are within very incised channels (as deep as 8 feet in sections) and contribute sediment to the perennial stream during winter and spring runoff events (Figure 4).

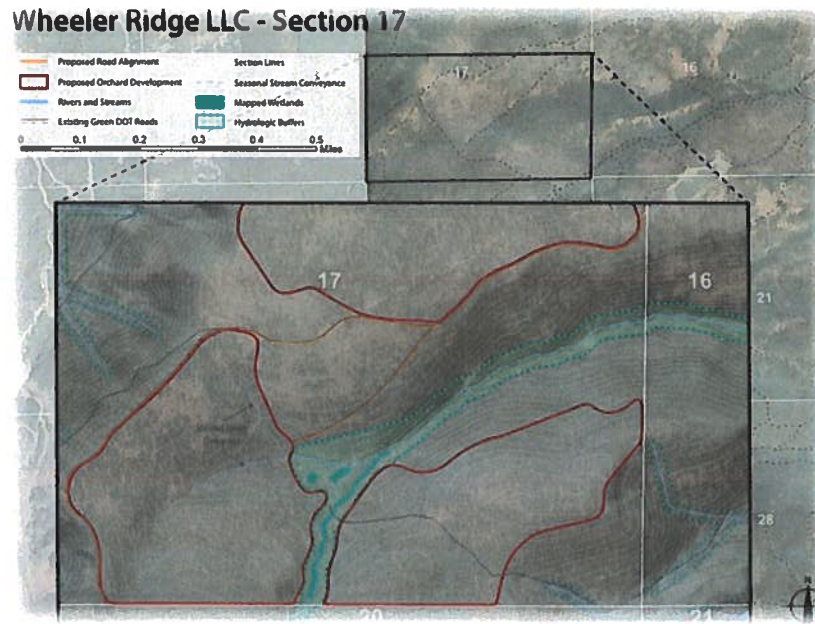


**Figure 4.** Seasonal stream has been unnaturally "re-routed" from natural drainage area from illegal road use.

- The intent is to pipe a small segment of these northern drainages to efficiently convey water to the head of the perennial stream to reduce chronic sediment transport and improve flows. Illegal activities and relic logging roads have degraded seasonal streams connecting to the perennial stream, instead the seasonal stream collects in road ruts and other road damaged areas – often never making it to its natural drainage pattern to connect with the perennial stream (Figure 5).

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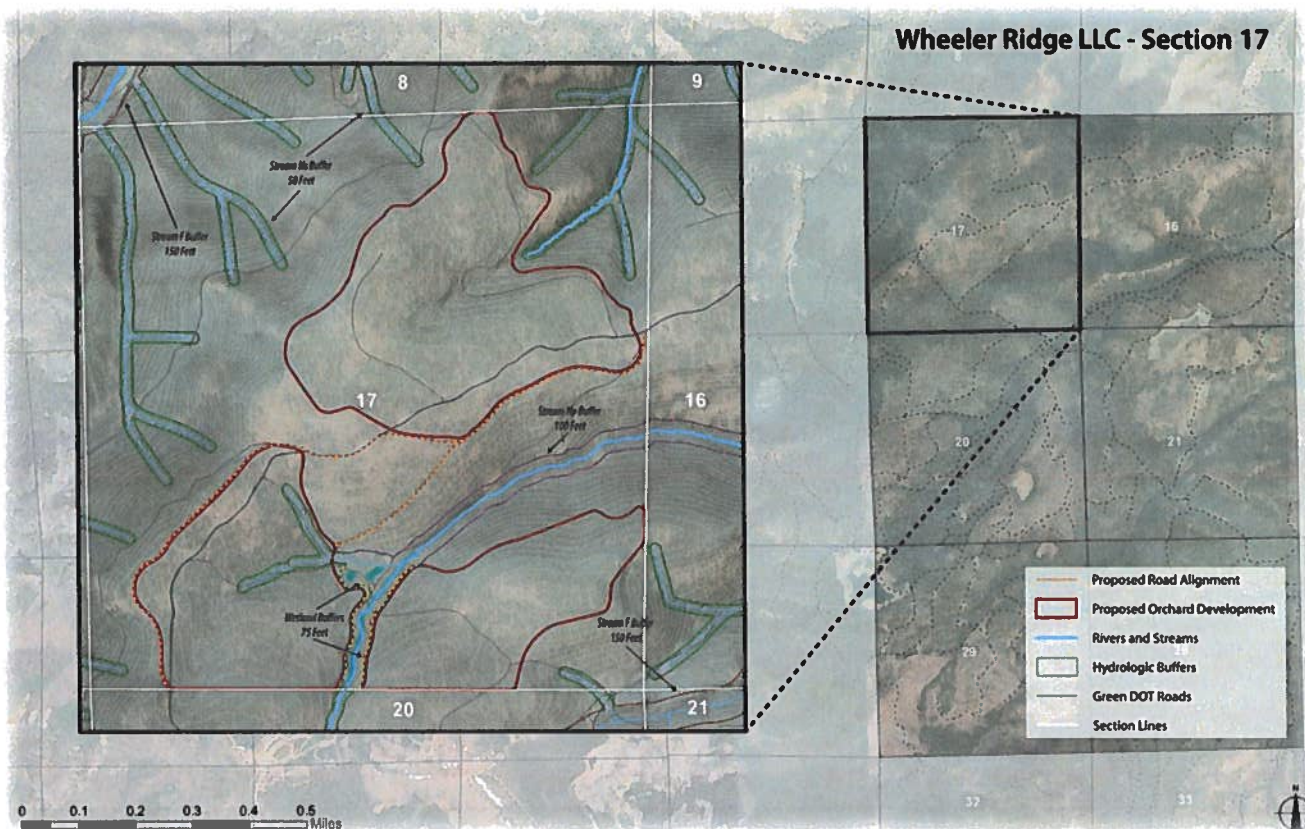
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**Figure 5.** Seasonal stream conveyance to perennial stream, delineated wetlands, and hydrological buffers.

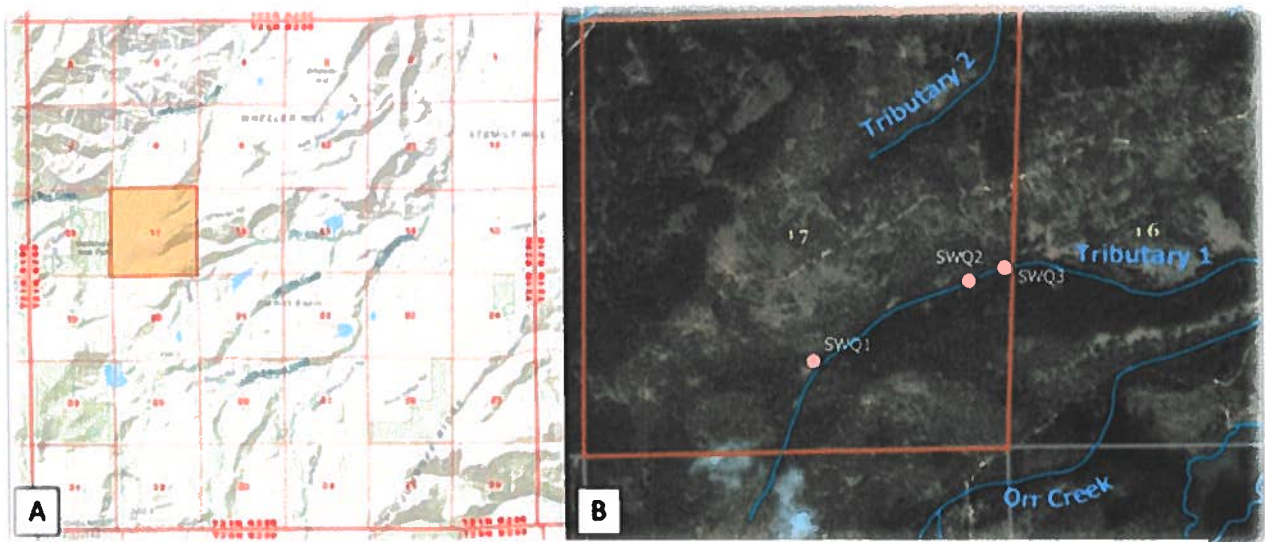
- Chelan County Code defines wetland protection standards in Chapter 11.80 Wetland Areas Overlay District (WOD), which includes requirements for rating the wetland and making buffer width determinations based on rating score results. Standard mitigation sequencing applies and is provided in the attached Critical Areas Report. Further consultation with permitting agencies will ensure mitigation is appropriate to the scope of the project and maintains water quality for downstream systems (Figure 6).
- As required by Chelan County code, the Washington State Wetland Rating System for Eastern Washington (WRSEW) was applied in the Critical Areas Report. The version of the WRSEW referenced in code was Hraby 2004a but code also indicates “as amended” therefore wetlands associated with the project site were rated according to the 2014 WRSEW (Ecology Publication #14-06-030). Wetlands identified as part of this project were classified according to the USFWS Cowardin classification system (Cowardin et al. 1979) and the USACE Hydrogeomorphic (HGM) classification system (Brinson 1993). Wetland buffers width are assigned relative to Wetland Category rating results (Critical Areas Report, 201\*).
- There are three (3) wetlands in the area. Wetlands were delineated using the 2014 Eastern Washington Rating System, as required in Chelan County code. Wetland A's rating results indicated that it had moderate Site and Landscape potential to provide for water quality treatment and flood storage, but low Value, due to the lack of significant pollution and flooding problems – i.e., its potential was not needed in the current setting. Wetland A scored moderate for habitat Site and Landscape potential and high Value for habitat functions. The final combined score was 18 points – a Category III wetland system. Wetlands B and C were rated as one system, partly because they were associated, but also because they were similar system. The B/C rating results indicated that for Water Quality functions and values, these wetlands had low Site potential and moderate Landscape potential to provide for water quality treatment – due to lack of physical structure and ponding, which would provide for more effective treatment. They had low Value for water quality treatment due to the lack of pollutants in the area. For Hydrologic functions and values, they had low Site and Landscape potential to provide for water storage—due to being small with minimal ponding depths. However, they had high Value for hydrologic functions due to helping provide off-road storage in an area that periodically floods. Wetland B/C's final combined score was 17 points – a Category III wetland system. A Category III wetland adjacent to Low Intensity Development (agriculture) is assigned a standard buffer of 75 feet (Figure 6). No new impacts to streams, wetlands or buffers are proposed. Areas damaged from past off-road activities and undersized culverts will be restored/replaced if necessary and in consultation with permitting agencies.





**Figure 6.** Wetland and riparian assigned buffers for low intensity development, Section 17.

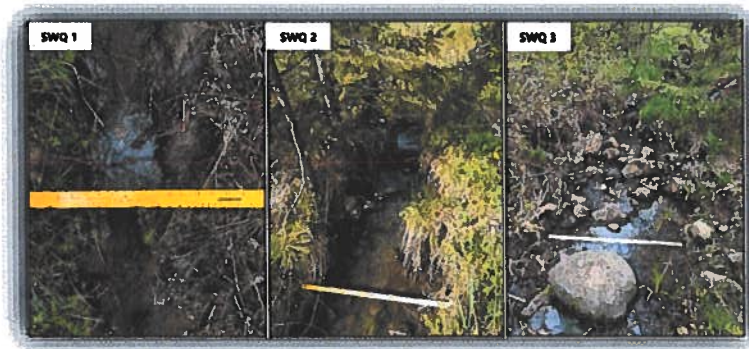
- In spring of 2018, Four Peaks Consulting collected surface water systems data in the projects area to provide an initial characterization of baseline surface water resources in Section 17 (Figure 7). None of the streams within the proposed project area are listed on the Washington State Water Quality Standards to determine which designated uses apply (WAC 173-201A). Fish passage data provided by the WDFW was reviewed. Tributary 1 is located above multiple downstream passage barriers which preclude anadromous fish from accessing habitat within Section 17. Two small streams identified within the proposed project area were investigated in the field and included an unnamed tributary draining into Orr Creek and then Stemilt Creek (labeled Tributary 1 in Figure 4 and an unnamed tributary draining into Squilchuck Creek (labeled Tributary 2 in Figure 4). Tributary 2 was dry during the field investigation and



**Figure 7.** Data collection vicinity map, Section 17 with hydraulic and water quality locations.

therefore was not further evaluated. There are no fish bearing streams within the proposed project. All development will occur outside of the standard riparian buffers.

- Baseline flow measurements and water quality samples were collected at three sampling locations<sup>5</sup> (Figure 8) along Tributary 1 on May 16, 2018 (Table 1). Flow was calculated at each of the three Tributary 1 sampling locations by multiplying the measure water velocity by the cross-sectional area of the channel. Velocity measurements were obtained with a Global Water FP 201 flow probe and the cross-sectional area of the channel was determined by measuring the channel width and depth at several locations across a transect at each site.



**Figure 8.** Vicinity photographs of sampling locations SWQ1, SWQ2, and SWQ3 within Tributary 1.

**Table 1.** Flow calculation parameters and flow estimates for sampling transects in Tributary 1.

Sampling Location	Channel Width (ft)	Measured Velocity	Cross-sectional Area (ft <sup>2</sup> )	Estimated Flow (ft <sup>3</sup> /s)
SWQ1	0.42	0.5	0.03	0.02
SWQ2	1.33	0.4	0.15	0.06
SWQ3	1.00	1.5	0.10	0.14

- Field parameters including temperature, dissolved oxygen (DO), DO saturation, pH, and specific conductance were measured at the three locations in Tributary 1 using a YSI ProDSS Handheld with a multi-parameter sonde. The equipment was calibrated<sup>6</sup> prior to use. Overall, the water quality measurements in Tributary 1 appeared to reflect groundwater contributions upstream (SWQ1) and then reflected increasing effects of exposure to atmospheric conditions downstream. The field parameter data collected is summarized in Table 2. The limited sampling in Tributary 1 presented variable surface water quality conditions that were representative of groundwater source and generally protective of sensitive aquatic life; respectively.

**Table 2.** Field water quality parameters measure on May 16, 2018.

Field Parameter	SWQ1	SWQ2	SWQ3
Time	8:17 AM	9:18 AM	9:50 AM
Temperature (Celcius)	5.5	10.5	10.6
Dissolved Oxygen (mg/L) <sup>2</sup>	6.3	8.8	9.1
*Dissolved Oxygen Saturation (%)	50.2%	94.5%	94.8%
Specific Conductance (mS/cm) <sup>4</sup>	0.2	0.1	0.1
pH	7.0	7.2	7.3

\*Estimated based on temperature, barometric pressure (29.8 inches) and specific conductance from U.S. Geological Survey's DO Tables.

- WDNR Stream Type maps were consulted and revised following field work carried out with WDNR staff. Streams incorrectly mapped by WDNR have been removed. Maps provided in attached documents reflect stream typing updates, which are also available at <https://www.dnr.gov>. There are no Fish-bearing streams (Type F) within Section 17. Because this site is at a drainage divide, streams were Non-Fish,

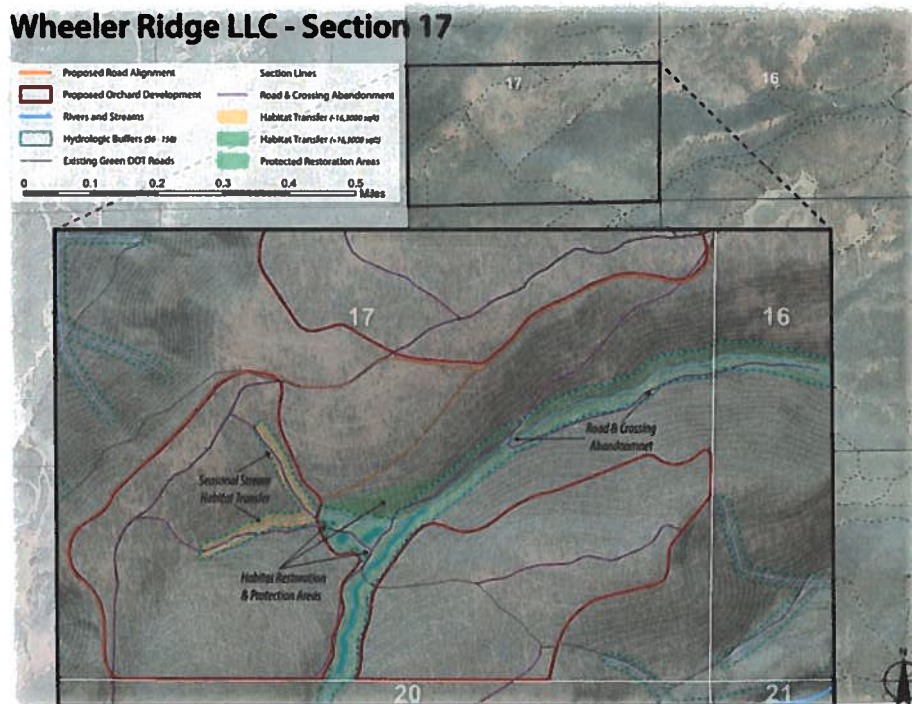
<sup>5</sup> No flow was observed in Tributary 2 on May 16, 2018.

<sup>6</sup> Calibration of pH was verified at pH 4, 7 and 10 using reference solutions. For DO, the barometric pressure setting was adjusted to the pressure reported in Wenatchee on the day of sampling such that the DO readings were representative of the local conditions.



Non-Seasonal (Ns), and had standard buffers of 50 feet. One section of onsite stream in the southeast quadrant of Section 17 was designated as Non-fish, Perennial (Np) by WDNR and WDFW staff, despite it having no flow by late May in the past two seasons. That section of stream has a standard buffer of 100 feet. Some of the stream in the south-central portion of the Section had associated Category III wetlands, which have a standard buffer of 75 feet in low intensity development areas; agriculture is regulated as *Low Intensity Development* in Chelan County.

- The proposed orchard development, which includes the 9.9 acre-foot reservoir will be outside of riparian and wetland buffers. In consultation with permitting agencies, short-term and/or long-term efforts to successfully convey seasonal runoff to the perennial stream will occur in a riparian buffer. Figure 9 also illustrated conceptual mitigation for conveying season streams via and underground pipe.



**Figure 9.** Habitat transfer of an estimated 16,300 square feet from seasonal stream conveyance buffer impacts to provide predicted flows to the perennial stream plus restoration of up to 48 acres of wetland-meadow habitat.

- Removal of illegal roads and old relic logging roads is expected to improve natural drainage patterns, reduce erosion and water ponding, and provide direct seasonal stream flow to the perennial stream.
- An existing logging road within the riparian and wetland buffer will continue to be used to avoid constructing a new road. Upgrades to existing crossings within buffers to improve hydrologic and habitat functions can be accomplished if requested by permitting agencies to maximize habitat benefits and/or reduce sediment transport.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

- Yes. An estimated 48 acres of wetland-meadow habitat and other habitat will be restored by removing user-built roads and dispersed camping/mud bogging sites in consultation with permitting agencies. Habitat that has been heavily impacted by illegal access, primarily wetland-meadow habitat will be revegetated with appropriate, native vegetation within wildlife corridors, public access will be restricted, and habitat protection signs will be installed as necessary. Wheeler Ridge, LLC will consult with WDFW and other permitting agencies prior to implementing restoration plans to ensure habitat benefits to elk and other wildlife are maximized. Road closures will reduce existing disturbance to wildlife and restoring user-built

roads for habitat will increase forage and escapement for wildlife.

- Installation of habitat protection signs.
- Discourage public access to private property per WDFW land management recommendations to reduce conflicts between humans and wildlife.
- Convey seasonal water to the perennial stream using during spring and summer months for elk and other wildlife; the stream typically goes dry as early as late May.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

- None.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

- Yes. The orchards will be irrigated with existing water rights from the Lower Stemilt Irrigation District (LSID). The project area was annexed into the LSID boundary to facilitate irrigation service from that purveyor. LSID has a large existing portfolio of water rights that are sourced from Stemilt Creek and the Columbia River as well as additional recently acquired rights sourced from the Columbia River. Together these rights provide sufficient instant and annual quantities to serve the existing and proposed orchards served by the District from existing authorized diversions.
- Irrigation of tree fruit is not typically associated with increased risk of slope instability. To conserve water, soil, and plant nutrients in the soil, and to control pumping costs, irrigation practices will be implemented as recommended in the Washington Irrigation Guide (WIG) developed by the U.S. Department of Agriculture Natural Resources Conservation Service. These conservation practices minimize the amount of water infiltrating below the root zone, thus limiting the effects of irrigation water on slope stability. According to the WIG and Washington Department of Ecology's Guidance Document, GUID-1210, only about 15% to 25% of irrigation water would enter the soil column below the root zone. The balance is evaporated or taken up by vegetation. Additionally, because irrigation occurs during the driest months of the year, the volume of water infiltrating below the root zone due to irrigation will be less than what occurs during the wet weather months.
- Wheeler Ridge, LLC will use their existing water right to provide seasonal water in the perennial stream throughout spring and summer months for elk and other wildlife; stream typically goes dry in late May.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

- No.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

- No.

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b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

- The potable water needs of the project are estimated at less than 350 gallons per day to serve one equivalent residential unit of caretaker and agricultural housing. This potable demand is expected to be met with an exempt well.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

- A septic system may be installed to support agricultural worker housing per the Chelan Douglas Health District.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

- Source of runoff may come from timber harvest activities, road improvements, and seasonal run-off from snowmelt and other natural precipitation events. However, the long-term goal of this project is to return seasonal streams impacted by relic logging roads and human induced recreational impacts to the perennial stream and revegetate to further reduce erosion.
- By eliminating illegal access to user-built roads and restoring an estimated 48 acres with native vegetation to control erosion, it is expected seasonal run-off will return to natural drainage patterns and provide additional habitat benefits.

2) Could waste materials enter ground or surface waters? If so, generally describe.

- None that are known.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

- Yes. Seasonal run-off will be returned to historical drainage patterns in areas currently being impacted by illegal user-built roads, mud bogging, dispersed camping, or relic logging roads. Other drainages within the proposed project are in steep, topographic lows and are not contemplated for orchard development. Additionally, conveying a segment of a seasonal stream and swale will improve natural drainage patterns currently impacted by incised stream channels, erosion, and mud bogging.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

- A storm water strategy will be developed to reduce or control surface and ground runoff water and drainage pattern impacts, which may include a catch basin to reduce sediment transport. The strategy will include identifying BMPs and monitoring effectiveness during construction and operations.

- Restoration of areas impacted by illegal user-built roads, mud bogging, dispersed camping, and relic logging roads will be revegetated to control seasonal run-off and provide additional habitat for wildlife outside of the orchard development area.
- Stormwater runoff management will be developed to meet guidance provided in the Washington State Department of Ecology Stormwater Management Manual for Eastern Washington.
- Public access will be restricted to reduce damage to existing habitat and future, restored habitat.

#### 4. Plants

##### a. Check the types of vegetation found on the site:

- ☒ deciduous tree: alder, maple, aspen, other
- ☒ evergreen tree: fir, cedar, pine, other
- ☒ shrubs
- ☒ grass
- ☐ pasture
- ☐ crop or grain
- ☐ Orchards, vineyards or other permanent crops.
- ☒ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- ☐ water plants: water lily, eelgrass, milfoil, other
- ☐ other types of vegetation

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##### b. What kind and amount of vegetation will be removed or altered?

- 250 acres of timber (primarily evergreen trees), shrubs, and grasses will be converted from a historical working forest to orchard development.
- A minimal amount of vegetation and timber located within existing road easements or within areas identified for improvements may be altered, however areas near roads that do not have tree staff buffers will be revegetated with native flora to control/avoid erosion and avoid introduction of noxious weeds.
- An additional 48 acres of habitat will be enhanced/restored and public access will be restricted. Illegal user-built roads will be revegetated with native flora in consultation with WDFW.

##### b. List threatened and endangered species known to be on or near the site.

- There are no, known listed or endangered plant species on or near the site.

##### d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

- A major element of this project includes protecting wetland buffers for ecological optimization, preserving an estimated 390 acres of forested habitat within the 640 acres, and in consultation with permitting agencies, restore/revegetate an estimated 48 acres of wetland-meadow habitat and other habitats degraded from illegal user-built roads, mud bogging, dispersed camping, and

relic logging roads to maximize wildlife benefits, promote natural drainage pattern, and restrict future public access.

- Tree stands will be left in wildlife corridors to support landscape connectivity and to buffer wildlife from roads and orchard development as feasible.

e. List all noxious weeds and invasive species known to be on or near the site.

- All noxious weeds will be sprayed and if required, reported to the Chelan County Weed Control Board. Wheeler Ridge, LLC will implement BMPs to avoid the spread of noxious weeds to wildlife corridors and adjacent habitats. Special care will be taken to check vehicles leaving and entering the site to avoid noxious weed seed introduction and/or dispersal.

## 5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: hawk, heron, eagle, songbirds, other: Turkeys,  
mammals: deer, bear, elk, beaver, other: Cougar and bobcat  
fish: bass, salmon, trout, herring, shellfish, other \_\_\_\_\_

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b. List any threatened and endangered species known to be on or near the site.

- There are no known threatened or endangered species known to be on or near the site. Tables 3-5 have been provided for reference. There are no fish bearing streams located within the proposed project area.

**Table 3.** Federally and state-Listed Endangered, Threatened, Sensitive, and Candidate Species that may occur within the Project Footprint per WDFW Priority Habitats and Species Report –Database .

Species	Scientific Name	Federal Status	State Status
<b>Wildlife</b>			
Columbia Spotted Frog	<i>Rana luteiventris</i>	none	Candidate
Northern Spotted Owl	<i>Strix occidentalis</i>	Threatened	Endangered
Western Toad	<i>Anaxyrus boreaus</i>	none	Candidate

**Table 4.** Federally and State-Listed Endangered, Threatened, Sensitive, and Candidate Species that May Occur within Chelan County but are Not Known to Be Within the Project Footprint.

Species	Scientific Name	Federal Status	State Status
<b>Wildlife</b>			
Gray wolf	<i>Canis lupus</i>	Endangered	Endangered
Grizzly bear	<i>Ursus arctos horribilis</i>	Threatened	Endangered

**Table 5.** WDFW Priority Habitats and Species Report.

Species	Scientific Name	Priority Area	Occurrence Type	Accuracy
<b>Wildlife</b>				
Columbia Spotted Frog	<i>Rana luteiventris</i>	Occurrence	Biotic detection	¼ mile
Elk	<i>Cervus elaphus</i>	Breeding Area	Paturition	As mapped*
Mule Deer	<i>Odocoileus hemionus</i>	Regular Concentration	Regular Concentration	As mapped*
Northern Spotted Owl	<i>Strix occidentalis</i>	Occurrence	Biotic Detection	Township
Northern Spotted Owl	<i>Strix occidentalis</i>	Management Buffer	Management Buffer	Township
Western Toad	<i>Anaxyrus boreaus</i>	Occurrence	Biotic Detection	¼ mile
Rainbow Trout – Squilchuck Creek	<i>Oncorhynchus mykiss</i>	Occurrence	Migration	Lines
Westslope Cutthroat – Little Stemilt Creek	<i>Oncorhynchus clarki lewisii</i>	Occurrence	Migration	Lines
Westslope Cutthroat – Big Stemilt Creek	<i>Oncorhynchus clarki lewisii</i>	Occurrence	Migration	Lines



<b>Vegetation</b>			
Freshwater Emergent	Aquatic Habitat	Aquatic Habitat	As mapped**
Freshwater Forested/Shrub	Aquatic Habitat	Aquatic Habitat	As mapped**
Lake	Aquatic Habitat	Aquatic Habitat	As mapped**
Wetlands	Steffen Pond	Aquatic Habitat	As mapped*

\*as mapped by WDFW

\*\* US Fish and Wildlife Service Polygons

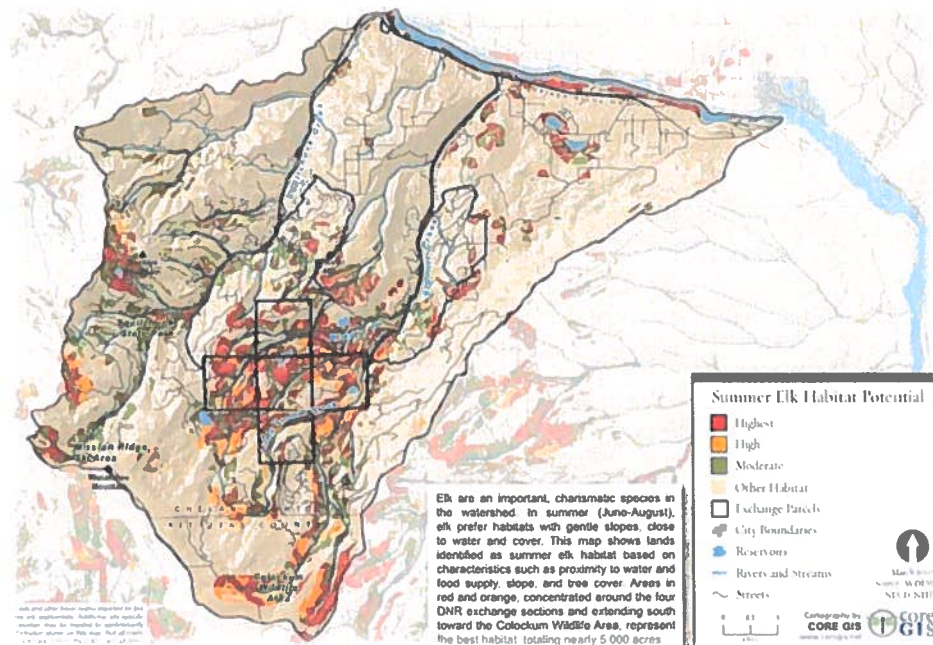
- WDFW PHS database identified a single owl (unknown status) was located approximately 0.9 miles west of the proposed project in 1996, and a single resident owl was located approximately 1.8 miles to the south in 1998. Northern spotted owls were listed as threatened under the Endangered Species Act in 1990 by the U.S. Fish and Wildlife Service. The proposed, project area has been logged several times.
- Additional surveys were conducted throughout the Mission Ridge Road and Squilchuck State Park area for the Mission Ridge Road Construction Project in 2005 and 2006 and no spotted owls were detected (U.S. Forest Service pers. Comm – Washington Conservation Science Institute, 2018).
- In 2018, the Washington Conservation Science Institute conducted a northern spotted owl Activity Center Assessment and subsequent surveys within Section 17 per U.S. Fish and Wildlife Services guidelines (USFWS 2012). Staff used a combination of spotted owl suitable habitat mapped by Davis et al. (2012), tree stand data (Schellhass, 2015), aerial imagery and field validation to identify potential suitable spotted owl habitat within and adjacent to the proposed project area. Most vegetation did not meet classification criteria as nesting, roosting and foraging spotted owl habitat.
- No spotted owls were detected (Table 6). Information has been provided to WDFW to supporting updating the PHS database.

**Table 6.** Northern spotted owl Activity Center Assessment results, Washington Conservation Science Institute, 2018.

# of Visits	Date	Completed Survey	Spotted Owl Detected?
1	04/26/2018	Yes	No
2	05/31/2018	Yes	No
3	06/11/2018	Yes	No
4	07/19/2018	Yes	No
5	07/26/2018	Yes	No
6	08/03/2018	Yes	No

- The proposed project includes establishing wildlife corridors, habitat restoration, and public access restrictions. The PHS database indicated Section 17 provides breeding habitat for elk.
- WDFW (2013) presented results of the *The Colockum Elk Study II: 2008-2012* to a group of interested stakeholders. The primary objectives of that study included (1) quantifying space-use and movements of Colockum cow elk, (2) assessing distributional relationship (i.e. connectivity between core area and Parke Creek elk sub-herds), (3) exploring effects of disturbance, weather, and habitat features on Colockum elk movements and distribution, (4) estimating survival, productivity, and condition of cow elk, and (5) evaluating whether the Whiskey Dick winter access closure has potential management value. Elk were collared with a GPS unit and all GPS collar “fixes” were tracked and archived for analysis. Staff indicated disturbance on public lands are influencing elk to move onto private lands for refuge. Movements and space use was also a topic of discussion, with WDFW recording 417,995 GPS collar elk fixes. Results from summer collared cow elk did not indicate they migrated to Wheeler Ridge, however the sample size was small (372).
- In 2008, CORE GIS and the Trust for Public Lands, facilitated by the Chelan County Natural Resources Department modeled and published summer elk habitat potential in the Stemilt Basin on lands proposed for WDNR ownership, which are now owned and managed by WDFW (Figure 10). A total of 5,000 acres were modeled by CORE GIS to illustrate areas elk may prefer during summer months (June-August) based on slope, proximity to water, and cover. Model attributes were not verified with field observations to assess accuracy of the model to predict elk habitat use, duration, and distribution. WDFW is currently working on an additional elk analysis expected to be completed in 2019 or 2020. However, elk were not

sampled in the Stemilt Basin and it is unknown at this time if WDFW plans on sampling additional elk as an element of the analysis.



**Figure 10.** Predicting potential elk habitat in the Stemilt Basin using specific habitat attributes (CORE GIS, 2008).

- In 2018 the Chelan County Natural Resources Department submitted the *Draft Stemilt-Squilchuck Recreation Plan*. That plan reports “heavy vehicle uses in spring, summer, and fall, and snowmobile use (including extensive groomed snowmobile trail system) in the winter, with fishing, camping, hunting, wildlife viewing, hiking, horseback riding, recreational driving, and snowmobiling” on WDFW lands. In 2007, traffic counters were installed on the Chelan County Road (aka green dot road). Vehicle use increased in the late spring and fall with the month of May having the highest traffic counts at 3,073 (Stemilt Vision Document, 2006). WDFW provided technical guidance and “critical evaluation of impacts of recreation” to wildlife. Elk habitat potential mapping was completed by CORE GIS in 2008 as incorporated into the 2006 Stemilt Vision Document. Results from this mapping exercise identify critical potential elk habitat within and along the heavily used Chelan County Road. The Plan does acknowledge results from CORE GIS 2009 do not account for disturbance to elk from vehicle traffic and high recreational use.
- Wheeler Ridge, LLC with support from SCJ Alliance followed up with a similar exercise as CORE GIS, consulting literature to identify consistent habitat attributes known to predict elk summer habitat potential. Results were similar to CORE GIS despite using slightly habitat attributes (Figure 11). Habitat attributes used to predict potential elk habitat preference included distance to roads, slope facing direction, slope (degrees), and percent canopy cover<sup>7</sup>; these attributes were the most consistent in the literature with roads determined to be the most consistent predictor of habitat elk use/nonuse.

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<sup>7</sup> Proximity to water was not an attribute applied because water conditions in the summer months are not favorable to elk as the seasonal streams typically go dry in May.

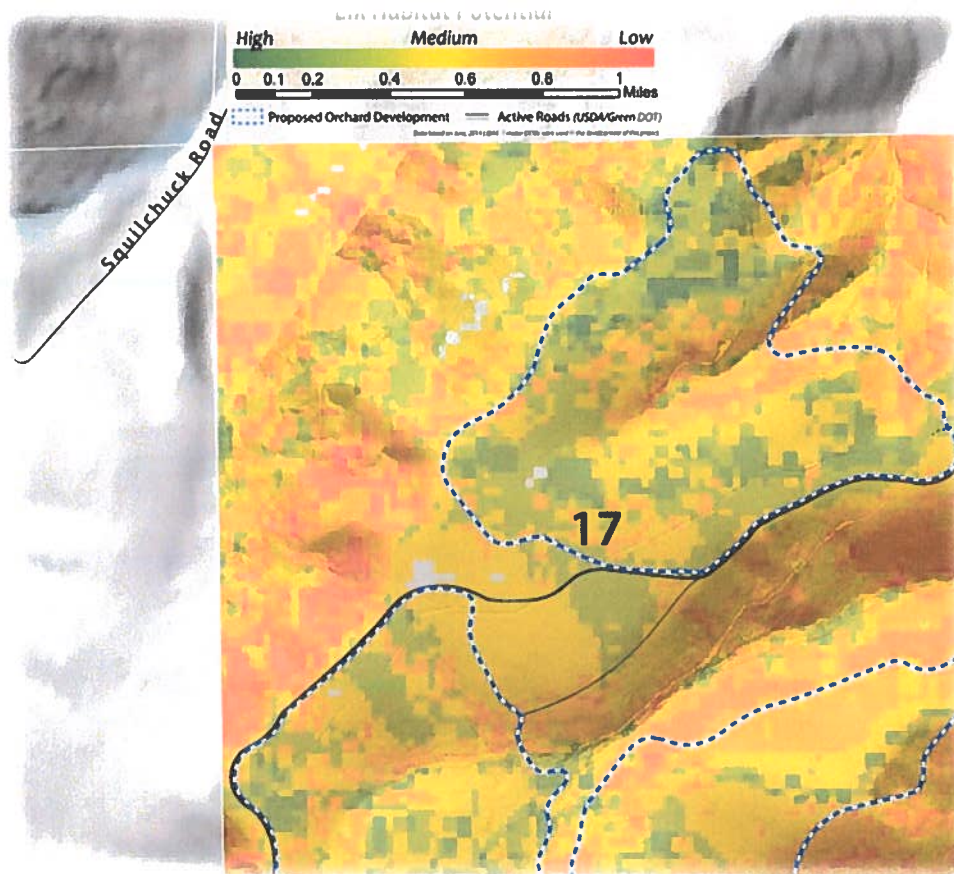


Figure 11. Predicting summer elk habitat potential on Section 17.

- Areas near roads may incorrectly display favorable summer habitat attributes because elk are known to avoid areas of heavy human disturbance. The Chelan County Road is actively used year around for recreation, hunting, camping, ATVs, and mud bogging. The Colockum elk herd distribution, behavior, and stress-levels may already be negatively influenced from heavy vehicle and recreational uses on adjacent lands and from active use of the Chelan County Road. Figure 12 illustrates current motorized-use roads within or adjacent to Section 17.

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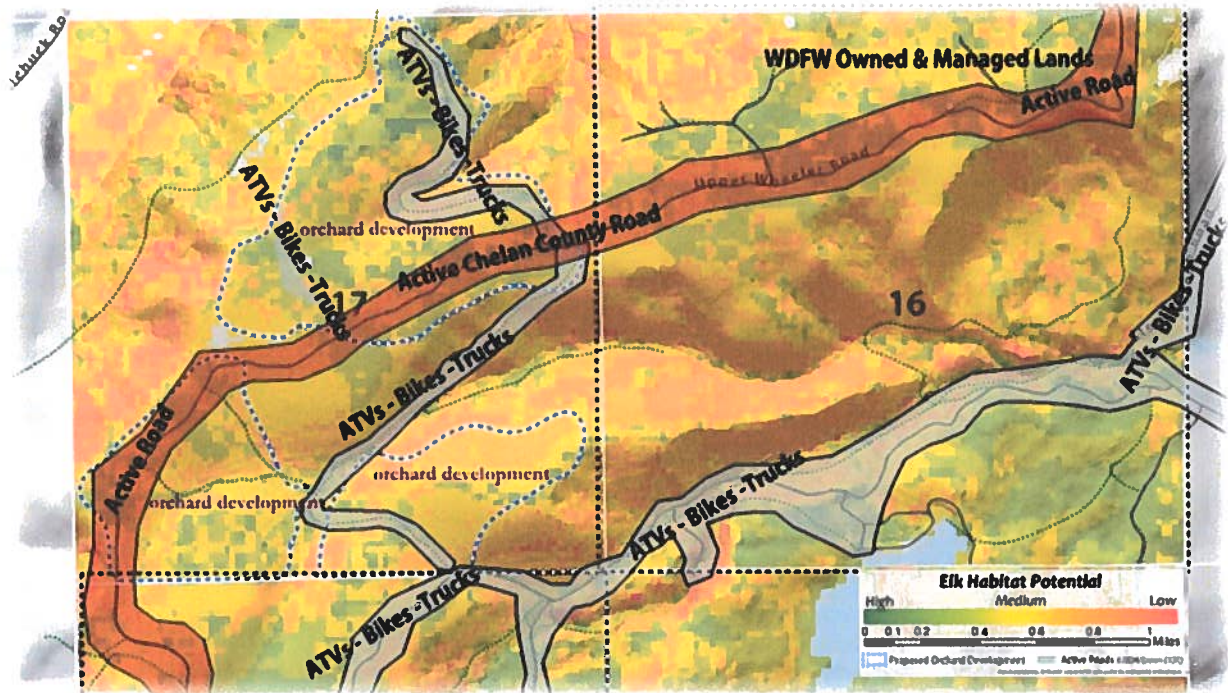


Figure 12. Summer elk habitat potential on Section 17 with existing pressures from motorized uses (human disturbance).

- Collared elk were not detected within the proposed project. However, Wheeler Ridge, LLC staff have observed elk and indications of elk presence on Section 17 and Section 16 (Figure 13). Staff observations have been occurring for over 40 years as a result of elk hunting and elk shed hunting. Data derived from habitat attributes identified and displayed using GIS was overlaid with 40 years of observational data. Compilation of data provided an improved understanding of areas within Section 17 and Section 16 elk prefer to go during spring and summer months (Figure 14).

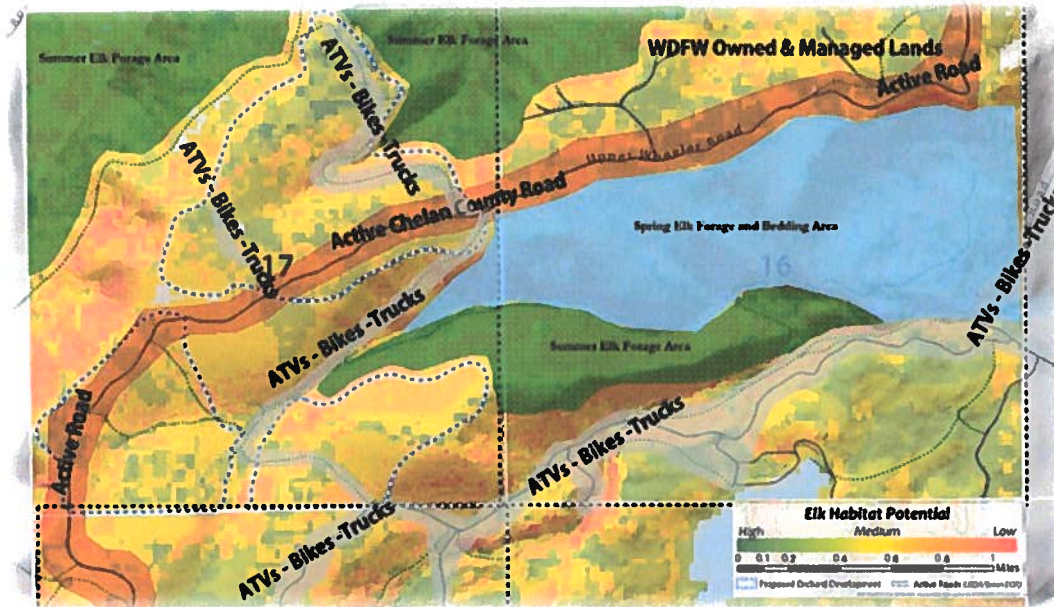


Figure 13. Elk bedding observed in Section 16 and Section 17 in September 2018 (Shiflett, 2018).

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**Figure 14.** Predicting potential elk habitat within the proposed project area using habitat attributes over-layed with known seasonal elk occurrences on Section 17 and Section 16 (SCJ Alliance, 2018; Shiflett, 2018).

- Wheeler Ridge, LLC is proposing to convey seasonal water for wildlife during spring and summer months to the perennial stream area to increase duration of time elk have access to water on Section 17. Public access within Section 17 will be restricted.
- Through the Colockum Wildlife Area Management Plan update process, WDFW may re-visit how the Colockum Elk Herd are managed including spatial distribution. Wheeler Ridge, LLC orchard development elements are not expected to have a significant impact to the proportion of elk known to be present during spring and summer months. Restoring habitat and providing seasonal water during spring and summer months will improve forage and habitat for elk and other wildlife. Restriction of public access within Section 17 will remove existing activities known to influence elk behavior and increase stress levels (e.g. ATVs and 4 x 4 truck use).
- The 250 acres of the 640 acres proposed for conversion to orchard development will no longer provide wildlife habitat and will be protected with an 8-foot deer fence. An element of the proposed project is to enhance and restore an estimated 48 acres of wetland-meadow habitat and other habitats impacted by illegal uses and conserve forest tree stands for buffers and cover for wildlife.
- Based on observational data, elk are not predicted to calve in Section 17 but may arrive after (Shiflett, 2018).

c. Is the site part of a migration route? If so, explain.

- Central Washington State is primarily located within the Pacific Flyway and Bird Conservation Region 9 – Great Basin. Of the species identified in the Great Basin, none are expected to occur within the proposed project area.
- WDFW did not detect collared elk within the proposed project, however WDFW is performing additional analysis. WDFW analysis is expected to be provided for public review in 2019 or 2020. There are observations of a proportion of the Colockum Elk herd within the proposed project area during the summer months, mainly near the perennial stream and on the north facing slopes away from roads and human activity in the summer months where they bed up, forage, and then travel to other, larger concentrated and connected habitats (Shiflett, 2018).



d. Proposed measures to preserve or enhance wildlife, if any:

- Preserve and protect 390 acres of forest habitat on Section 17 to buffer existing and future disturbance to wildlife and provide long-term protection of forage, connectivity, resting, and escapement habitat for wildlife.
- Provide wildlife corridors that connect to larger habitats and concentration areas; primarily on adjacent WDFW lands purchased using Section 6 funds for the protection of wildlife and their habitat.
- Restrict public access.
- Protect and enhance up to 48 acres of wetland-meadow habitat by restoring illegal, user-built roads, mudboggling areas, dispersed camping sites, and relic logging roads to maximize wildlife benefits (per consultation with WDFW and other permitting agencies).
- In consultation with WDFW, restore "green up" areas for elk and other wildlife within Section 17.
- Reconnect seasonal streams re-routed outside of its channel from user-built roads and mud bogging; replace existing culvert(s) to support this effort as determined by permitting agencies.
- Enhance and protect wildlife access to seasonal stream and meadow habitat with forest stand buffers, critical area buffers, habitat protection signage, and restricted public access.
- During the past 100 years, Washington State has become warmer and wetter (Intergovernmental Panel on Climate Change, 2001). The Department of Ecology (2018) reports "Wildfires in Washington are on the rise due to increased temperatures and less precipitation. Wildfires threaten air quality, health, the environment, and the economy. Additional water storage capacity of up to 200 acre-feet for fire suppression is viable (Section 21) and may also provide enhanced wildlife habitat and improved stream flows, particularly during a hot, dry summer. Though this reservoir is not proposed as an element of this project, the reservoir could provide future water supply needs. Recommendations – Desired Future Conditions from the WRIA 40A Watershed Plan (Final) of *"Upgrade existing water reservoir storage and irrigation water distribution systems for water conservation and continued safety protection (fire suppression water). The availability of fire suppression water protects the watershed and natural resources within the WRIA. If this area were to experience a catastrophic wildfire, it would drastically impact the water balance in the area because of changes to runoff and evapotranspiration that would occur"*.
- In consultation with WDFW, Wheeler Ridge, LLC could provide feeding and watering stations to maximum benefit to wildlife in areas on Section 17. If WDFW determines another species should be targeted within the proposed project for feeding stations (i.e. turkey feeding stations), Wheeler Ridge, LLC will work with WDFW to do so.

e. List any invasive animal species known to be on or near the site.

- There are no known invasive animal species at or near the site.

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**6. Energy and Natural Resources**

- a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

- Utilities will be placed in existing easements on Section 16, Chelan County road right-of-way, and/or private property to provide electricity for irrigation pumps, sprinklers, seasonal housing, and outbuildings for power and heat.

b. Would your project affect the potential use of solar energy by adjacent properties?  
If so, generally describe.

- No.

c. What kinds of energy conservation features are included in the plans of this proposal?  
List other proposed measures to reduce or control energy impacts, if any:

- None proposed at this time.

## **7. Environmental Health**

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal?  
If so, describe.

1) Describe any known or possible contamination at the site from present or past uses.

- NA.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

- NA.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

- There will be orchard spray, motor oils, gasoline, and other orchard operational chemicals stored during construction and for operations. All chemical inventories will be listed in accordance with Washington State Department of Ecology, Washington State; Labor and Industries.

4) Describe special emergency services that might be required.

- The proposed reservoir will provide fire suppression in the event of a forest fire. County road improvements may provide better service to emergency service vehicles requiring to access adjacent public lands and/or fight fire.

5) Proposed measures to reduce or control environmental health hazards, if any:

- No environmental health hazards are anticipated to occur. BMPs will be implemented to minimize risk. If there is an inadvertent leak from heavy equipment it will be cleaned-up immediately with an Ecology approved spill kit. Spill collection facilities will be used at spray fill station to prevent ground contamination from leaching chemicals.

- The proposed 9.9-acre-foot reservoir could provide fire suppression access in the event of wild fires on or near the properties.
- Non-commercial thinning to selectively log as part of a long-term plan to make this privately-owned forestland more resilient to fire, disease and climate change, and provide additional forage habitat for wildlife during the summer months.
- Chelan County Road improvements are being privately funded and will support safe access for firefighting suppression and emergency vehicle access.

**b. Noise**

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

- There are no known noises in the area which may affect the proposed project.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

- Levels of noise from timber harvest, logging trucks, site clearing, trucks hauling fruit, and other equipment is expected to be minimal, seasonal, and typically from sunrise to later afternoon typically. Noise from typical bird sound deterrents will be minimal and used in conjunction with non-noise deterrents such as inflatables, bird ribbons, and garlic juice (Figure 15).



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**Figure 15.** Example of typical inflatables used to deter birds with limited noise (Source: Inflatable Dancer, Fruit Growers New, 2018).

3) Proposed measures to reduce or control noise impacts, if any:

- None. Operations are seasonal. Orchards already operate on Wheeler Ridge and throughout the Stemilt Basin.

**8. Land and Shoreline Use**

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

- The area is a historical working forest.
  - Adjacent properties include other orchard development, forested lands, residential, Squilchuck State Park, and WDFW lands. The Colockum Wildlife Area is adjacent to the proposed project area is estimated at 105,662 acres. WDFW recently purchased<sup>8</sup> Section 16 and Section 22 from WDNR for the protection<sup>9</sup> of *Oncorhynchus mykiss* (wild steelhead), habitat for the Endangered Species Act (ESA) Listed Gray Wolf and their prey species mule deer and elk and to protect suitable habitat for ESA Listed northern spotted owls. This newly acquired area totals 1,275 acres and has been incorporated into the Colockum Wildlife Area (Colockum Wildlife Area 2017 Management Plan Update, WDFW). Enhanced recreational opportunities are being planned within the Stemilt Basin (Stemilt-Squilchuck Recreation Plan, 2018).
  - The Stemilt-Squilchuck Basin is a popular destination for recreational enthusiasts because it offers an array of year-around activities including but not limited to reservoir fishing, dispersed camping, wildlife viewing, horseback riding, biking, hiking, backcountry skiing, snowshoeing, snowmobiling, ATV riding, and hunting.
  - There are several lakes within the Stemilt Basin that are managed by WDFW for fishing opportunities. In the spring, WDFW stocks Clear Lake with catchable-size Rainbow trout. WDFW will occasionally plant fingerling Tiger Trout in the late spring. Clear Lake is 4 acres and can be accessed from Stemilt Loop Road. Another popular lake is Lily Lake. This is a reservoir lake stocked with Rainbow trout and can be accessed a mile south of Stemilt Loop Road. Black Lake is a reservoir operated by the Wenatchee Heights Reclamation District. Each spring WDFW plants Rainbow, Tiger, and Brown trout in Black Lake which is accessed by taking Stemilt Loop Road to Orr Creek Road.
  - The Colockum elk herd are scattered within the Squilchuck-Stemilt Basin and provides harvest opportunities to locals and visitors (WDFW, 2015).
  - Mule deer hunting is also very popular, and Chelan County has become a destination hunt. Other wildlife hunting in the area includes black bear, coyote, and cougar. There is also some turkey hunting.
  - Wheeler Ridge, LLC has existing easements across WDFW lands for access and utility placement on Section 16.
  - The proposal which will convert 250 acres of the 640 acres of a historically working forest to orchard development.
  - The proposed project is not expected to affect nearby adjacent properties. The proposed project is in an area famous for agricultural operations, particularly for apples and cherries. Lands adjacent to the proposed project are owned and managed by WDFW for wildlife, fish, habitat, motorized access, fishing, camping, hunting, and other recreational activities. The Squilchuck State Park is also located adjacent to the proposed project. The State Park is heavily visited by mountain bikers, hikers, fat bikers, snowshoers, and runners. The State Park also accommodates sledding, has an event center, and provides for group camping. The proposed project is not anticipated to impact any of those activities. The proposed project occurs on private lands and/or lands within which an easement exists.
- d. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

<sup>8</sup> WDFW secured federal Endangered Species Act funding to buy the remaining two sections of DNR trust land, appraised at \$1,778,000, to protect Stemilt Basin habitat for elk, deer, wolves, and other wildlife species.

<sup>9</sup> Methow Phase 8 Section 6 Proposal, 2008. Washington State Department of Fish and Wildlife.

- Yes. The site has been logged several times and has been considered a working forest. Other lands adjacent to or near the proposed project footprint are developed orchards or recreational lands such as Squilchuck State Park and WDFW multi-use lands.
- The Natural Resource Conservation Service has identified soils within the proposed project footprint as "*Farmland of Statewide Importance*"; Section 16 includes "*Farmland of Unique Importance*" in the northern portion where Wheeler Ridge, LLC would propose orchard development if Phase 1 is successful and as agreed to by WDFW. The proposed orchard development will protect lands designated by the Nature Resources Conservation Service as "*Farmland of Statewide Importance*" to meet the Nation's short- and long-range needs for food and fiber.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

- Large-scale agricultural operations have existed on Wheeler Ridge and within Stemilt Basin for decades. This orchard development is typical of existing working orchard operations located adjacent to or near the proposed project. The proposed project is further complimented by existing orchard operations, equipment, storage, and seasonal agricultural worker housing that already exists near the proposed project area and is owned by Wheeler Ridge, LLC and its affiliates. This will reduce the need for additional development to support operations. Oversized equipment will be typical of equipment that has been utilized in the Stemilt Basin for decades.

c. Describe any structures on the site.

- There are no structures at the site now. Potential, future structures include a 9.9-acre-foot reservoir, loading docks, installation of a deer fence, utilities, seasonal agricultural worker support facilities, fuel station, outbuildings, and spray sheds.

d. Will any structures be demolished? If so, what?

- No.

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e. What is the current zoning classification of the site?

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- RR20

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f. What is the current comprehensive plan designation of the site?

- Rural Residential.
- The Comprehensive Plan directs agricultural development in areas that are designated as either Farmland of Unique Importance or Farmland of Statewide Significance. The proposed project area is within both those designations.
- Lands within the proposed project area meet criteria for long-term agricultural significance per WAC 365-190-050.

g. If applicable, what is the current shoreline master program designation of the site?



- There are several shoreline master program designations within the proposed project footprint that include non-fish bearing streams, wetlands, and conservancy around irrigation reservoirs.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

- Yes. WDFW has identified Class II Fish and Wildlife areas. There are no fish bearing streams within Section 17 (WDNR, Hydro-layers, 2018).
- Some areas within the proposed project footprint and adjacent lands are designated *Landslide and/or Erosion* areas per Chelan County GIS layers.

i. Approximately how many people would reside or work in the completed project?

- An estimated 24 agricultural workers may reside on Section 17 between April and September to support protecting the property from trespassers and fire suppression if necessary.

j. Approximately how many people would the completed project displace?

- None. The proposed project is expected to provide 2 full-time jobs; 24 seasonal jobs, and up to 900 jobs during the extended harvest season.

k. Proposed measures to avoid or reduce displacement impacts, if any:

- None

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

- The proposed project is compatible with the Chelan County Comprehensive Plan and the Goals and Objectives of the WRIA 40 Water Storage Assessment (2007), incorporated into the Shoreline Management Act Program, and fire hazard prevention objectives. Other proposed uses and plans in the area include Mission Ridge Ski Resort expansion and Squilchuck-Stemilt Basin Recreational Plan which are continuing with planning efforts; it is unknown at this time how those project land uses, and plans will impact land and shorelines.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

- This project proposal will convert a historical working forest to irrigated agriculture of long-term commercial significance. It is estimated short-term construction will contribute \$10 million-dollars to the local economy and within the state of Washington and operations/harvest of fruit may contribute an estimated \$10 million-dollars annually to local and state economies.

## 9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

- Housing provided for seasonal agricultural worker housing will not exceed Chelan County Code for RR 20 zoning.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

- None.

c. Proposed measures to reduce or control housing impacts, if any:

- All seasonal agricultural worker housing will follow applicable Chelan County Codes, as well as other applicable building permit and Department of Health requirements.

## 10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

- The tallest structure will be the spray storage shed and will not exceed 50 feet in height. The exterior of the structure will be galvanized, corrugated metal. Other structures may include utility poles for power.

b. What views in the immediate vicinity would be altered or obstructed?

- No views in the immediate vicinity will be obstructed.

e. Proposed measures to reduce or control aesthetic impacts, if any:

- None.

## 11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

- Minimal, glare may occur if reflective ribbons are used as bird deterrents.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

- No.

c. What existing off-site sources of light or glare may affect your proposal?

- None.

d. Proposed measures to reduce or control light and glare impacts, if any:

- None.

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## 12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

- Stemilt and Squilchuck Basin is a popular destination for recreational enthusiasts because it offers an array of year-around activities including but not limited to reservoir fishing, dispersed camping, wildlife viewing, horseback riding, biking, hiking, backcountry skiing, snowshoeing, snowmobiling, ATV riding, and hunting. Most of the areas are accessed by the Chelan County road system managed by WDFW or

WDNR.

- Tamarack Saddle, LLC & Mission Ridge Ski and Board Resort have proposed a Master Planned Resort expansion to the existing Mission Ridge Planned Development.
- Mountain biking, hiking, horseback riding, and trail running are prevalent activities in the area, primarily at Squilchuck State Park.
- There are several lakes within the Stemilt Basin that WDFW stocks with fish, offering recreational fishing opportunities.

b. Would the proposed project displace any existing recreational uses? If so, describe.

- No. Recreation occurring on private lands within the proposed project area is not authorized. The proposed project will not displace any existing, legal recreational uses on adjacent lands.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

- None that are known at this time. However, privately funding improvements to the Chelan County Road may enhance access to adjacent public lands. WDFW is in the midst of planning for enhanced recreational activities on their lands adjacent to the proposed project area. Wheeler Ridge, LLC is restricting recreational access within the proposed project area to avoid impacts to wildlife and their habitat. Squilchuck State Park and the Mission Ridge Ski area provide year-around recreation.

### **13. Historic and cultural preservation**

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

- There are no, known historic resources on the site that are eligible for listing (Cultural Resource Consultants, LLC 2018).

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

- Cultural Resource Consultants (CRC) conducted a cultural resource overview to identify previously recorded cultural resources and evaluate potential for previously unrecorded cultural resources within the property. Background research did not identify any previously recorded cultural resource sites to be present within the proposed project footprint.
- Comments received from the Confederated Tribes of the Colville Indian Reservation and the Department of Archaeology and Historic Preservation during previous SEPA review did not include a request for additional investigations.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

- The information presented in CRCs final report is based on professional opinions derived from their analysis and interpretation of available documents, records, literature, field investigations and observations.
  - Background research did not identify any previously recorded cultural resource sites to be present within the proposed project footprint, therefore further investigation is not scheduled for this proposed project.
- d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.
- In the event that any ground-disturbing or other construction activities result in the inadvertent discovery of archaeological resources, work should be halted in the immediate area, and contact will be made with county officials, the technical staff at DAHP, and tribal representatives. Work will be stopped until further investigation and appropriate consultations have concluded. In the unlikely event of the inadvertent discovery of human remains, work will be immediately halted in the area, the discovery covered and secured against further disturbance, and contact will be made with law enforcement personnel, consistent with the provisions set forth in RCW 27.44.055 and RCW 68.60.055.

#### **14. Transportation**

- a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.
- Stemilt Loop Road will be used to access existing roads across Sections 9 and 16. Wheeler Ridge, LLC has an easement from WDNR to use the road for transportation and operations within Section 16 and is required to maintain the road for safety and public use.
- c. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?
- No.
- d. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?
- Gravel, primitive open-space for parking will be available within the orchard development footprint.
- e. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).
- Yes. An element of this project includes improving the existing County road and relocating a portion of an existing road. Wheeler Ridge, LLC will maintain the improved roads in Section 16 and Section 17 to meet orchard development needs and the intent of the easement.
- f. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.



- No.
- g. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?
- Table 7 illustrates the results of estimated daily traffic generation for existing and future conditions to accommodate the proposed project. Because the harvest periods do not overlap, the proposed project will only add 10 daily round trips to the regular growing season traffic to the area road network during the existing harvest period. The proposed project operations will follow later than current harvest and will generate approximately 68 round trips less than the existing harvest period.

**Table 7.** Existing and projected daily round trip generation.

Vehicle Type	Seasonal (May to September)			Harvest (Early August)	Harvest (Late August)
	Existing Operations	Proposed Expansion	Total AFTER Expansion	Existing Operations	Proposed Expansion
Passenger Vehicles	19	10	29	349	290
Vans	0	0	0	4	3
Semi-Trucks	0	0	0	13	10
Straddle Buggies	0	0	0	29	24
<b>Totals</b>	<b>19</b>	<b>10</b>	<b>29</b>	<b>395</b>	<b>327</b>

- g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.
- No. Current movement of agricultural products on roads and street in this area has occurred for decades.
  - h. Proposed measures to reduce or control transportation impacts, if any:
    - The proposed project will generate essentially no traffic during the off-season and very little traffic throughout the entire year (approximately 20 daily trips per day). However, for two weeks per year in late August the proposed project may generate approximately 654 trips per day.
    - Public access will be restricted on Section 17 and user-build roads will revegetated to provide an estimated 48 acres of wetland-meadow habitat and other habitat for wildlife.

## 15. Public Services

- Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.
  - No. Wheeler Ridge, LLC provides a carpool van for employees. The proposed project infrastructure could provide immediate and additional resources for law enforcement staff and fire suppression in the event of wildfire(s).

b. Proposed measures to reduce or control direct impacts on public services, if any.

- There are no known direct impacts on public services.

## 16. Utilities

a. Circle utilities currently available at the site:

electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system,  
other \_\_\_\_\_

f. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

- Irrigation water will be provided by LSID.
- Power will be provided by Chelan PUD.

## C. Signature

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: Ben Alworth

Name of signee Ben Alworth

Position and Agency/Organization Project Manager, Wheeler Ridge LLC

Date Submitted: 10/2/2018

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# SEPA ENVIRONMENTAL CHECKLIST

## FIGURES ATTACHED

## WHEELER RIDGE, LLC

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FP 2018.326

**Figure 1. Proposed 250 Acres of Orchard Development, Wheeler Ridge, Chelan County.**

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7  
8  
9  
Quilchuck Road

☐ Proposed Orchard Development

Wheeler Ridge LLC

0 0.05 0.1 0.2 0.3 0.4 0.5  
Miles

N

Upper Wheeler Road

18

17

16

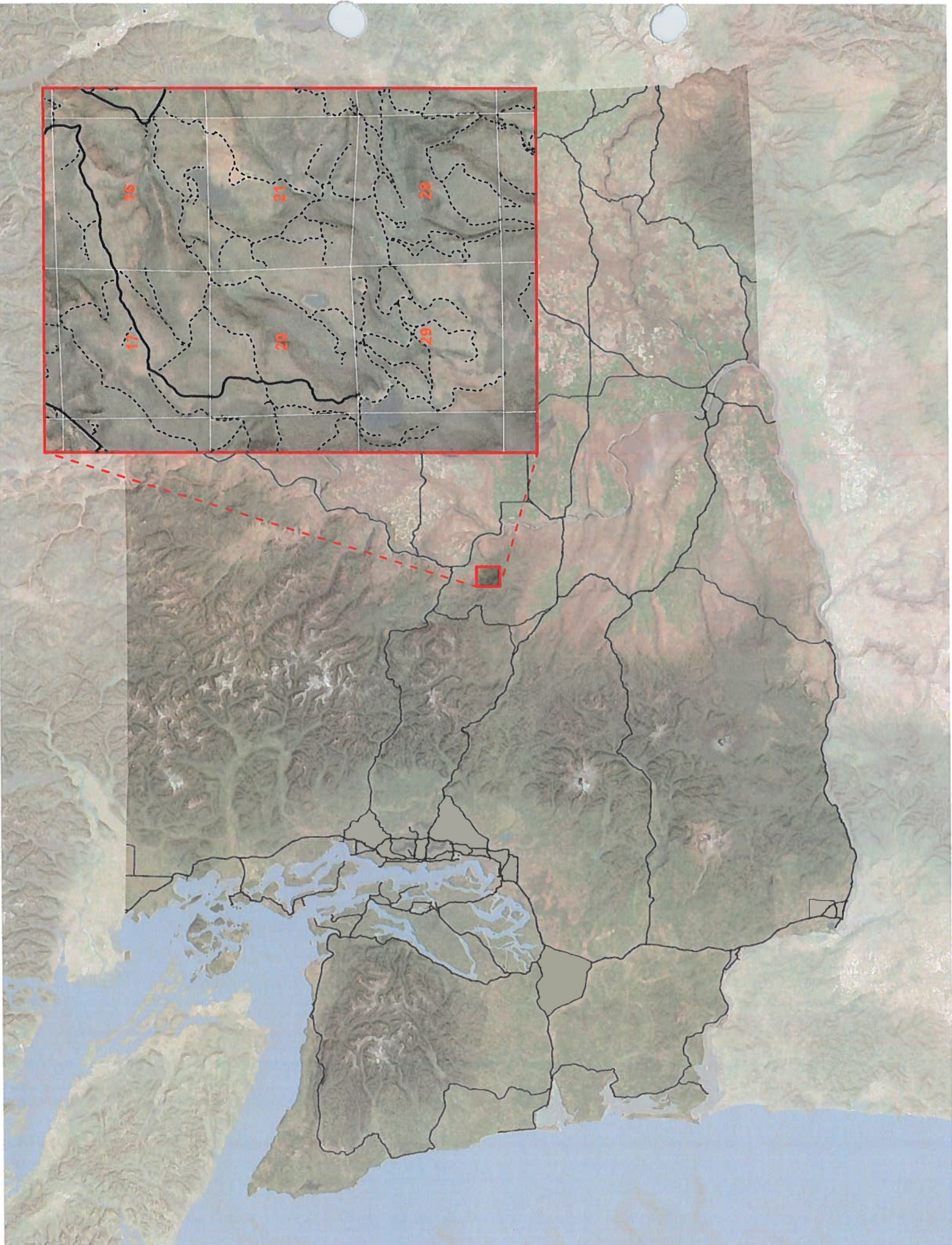
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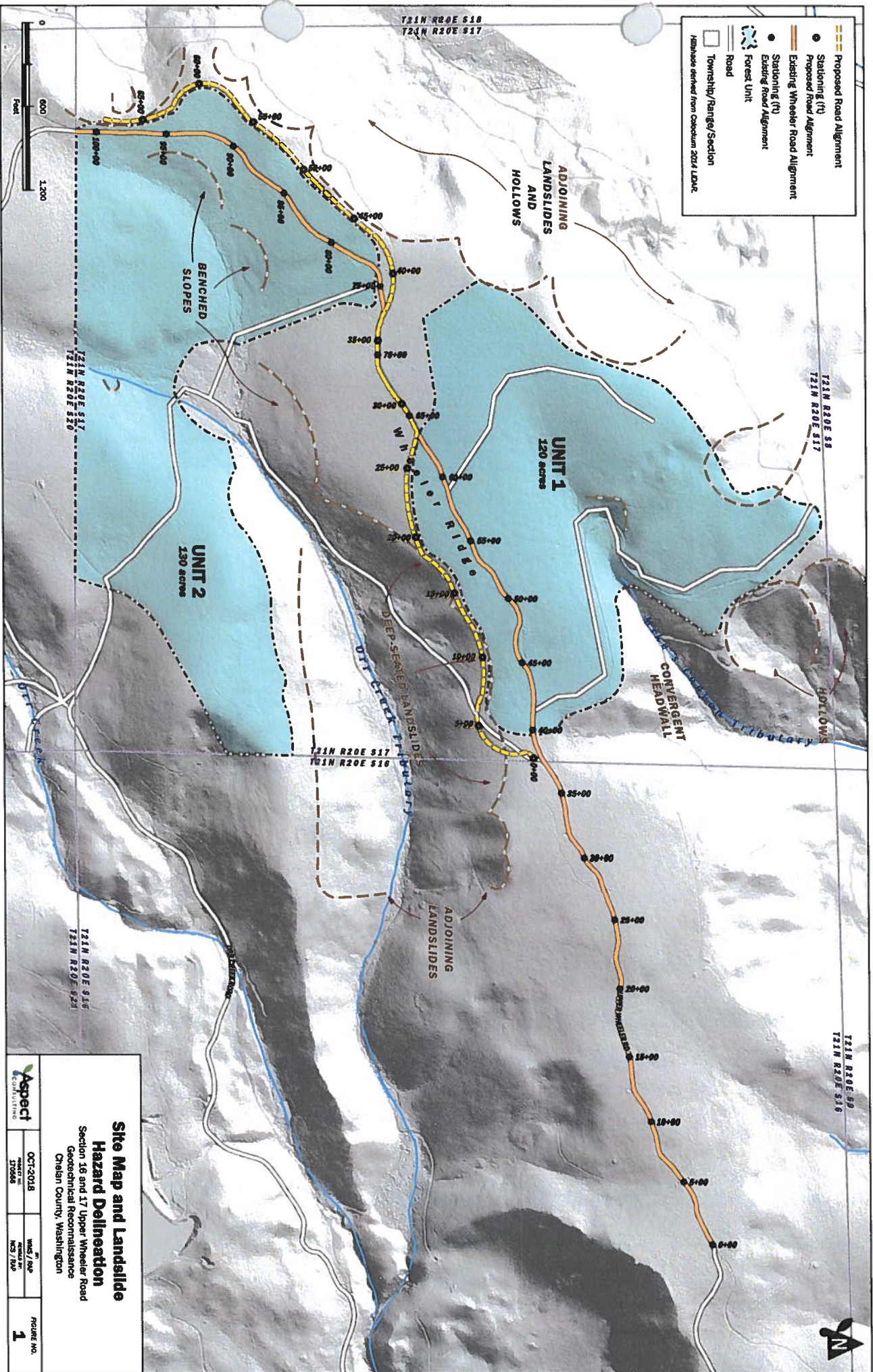
**Figure 2. Section 17 and adjacent Sections, Wheeler Ridge, LLC Vicinity Map.**





**Figure 3. Existing and proposed road alignment and slope stability identification - verification (Aspect Consulting, 2018).**





**Aspect Consulting**

**Site Map and Landslide Hazard Delineation**

Section 16 and 17 Upper Wheeler Road

Geotechnical Reconnaissance

Chelan County, Washington

OCT/2018	WMS/ROD	FIGURE NO. <b>1</b>
370546	MS/ROD	

**Figure 4. Seasonal stream has been unnaturally “re-routed” from natural drainage area from illegal road use.**

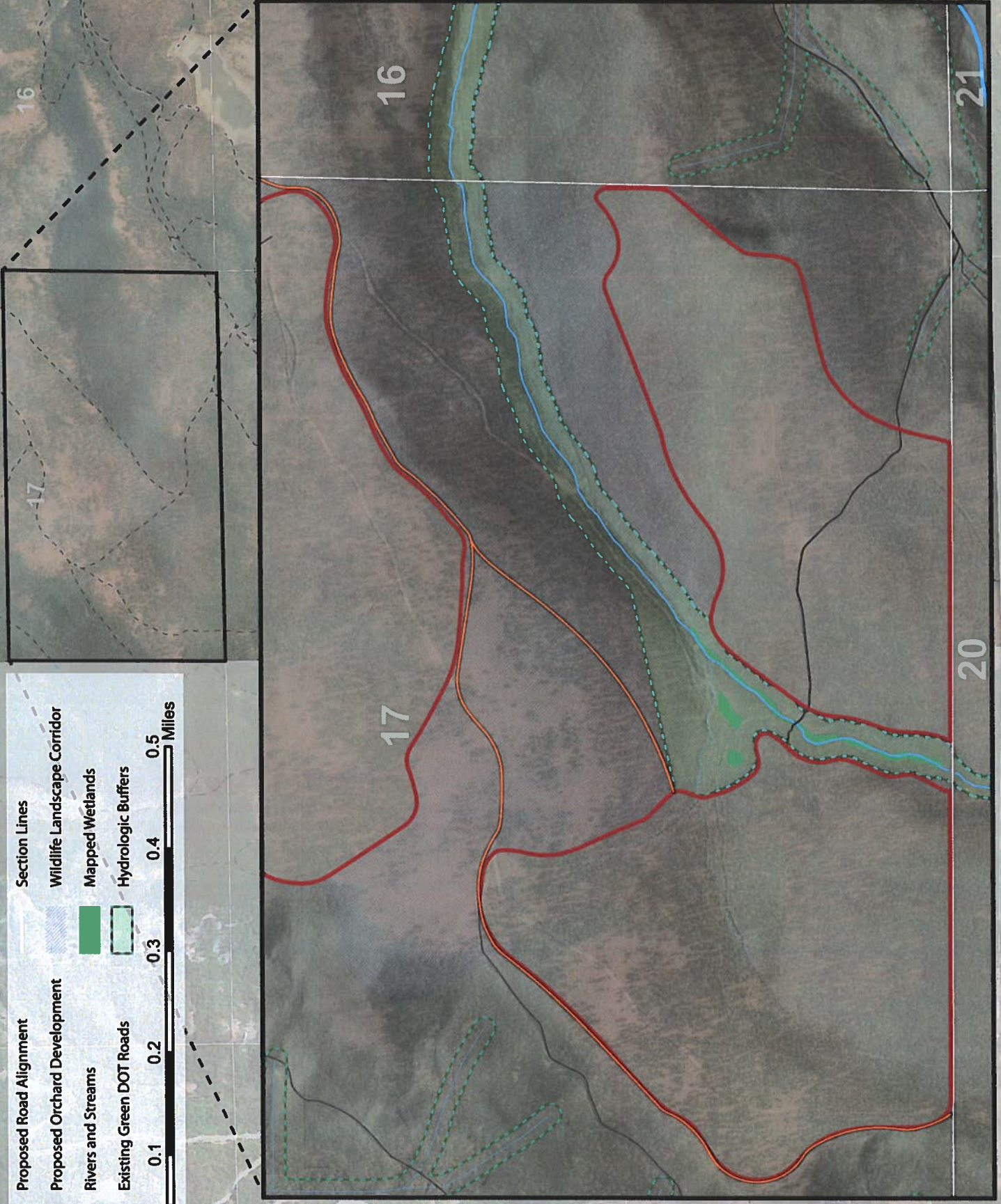
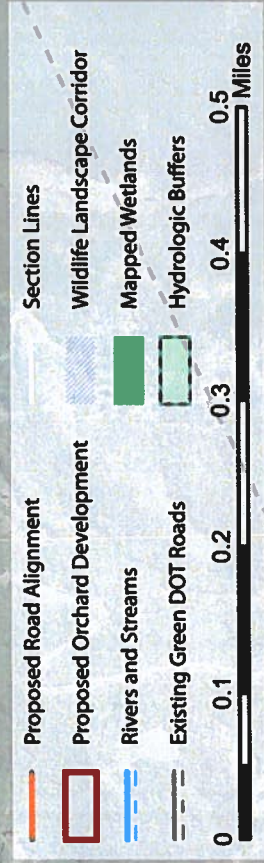






**Figure 5. Seasonal stream conveyance to perennial stream, delineated wetlands, and hydrological buffers.**

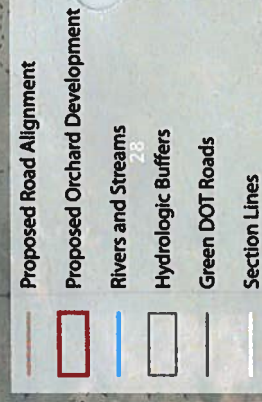
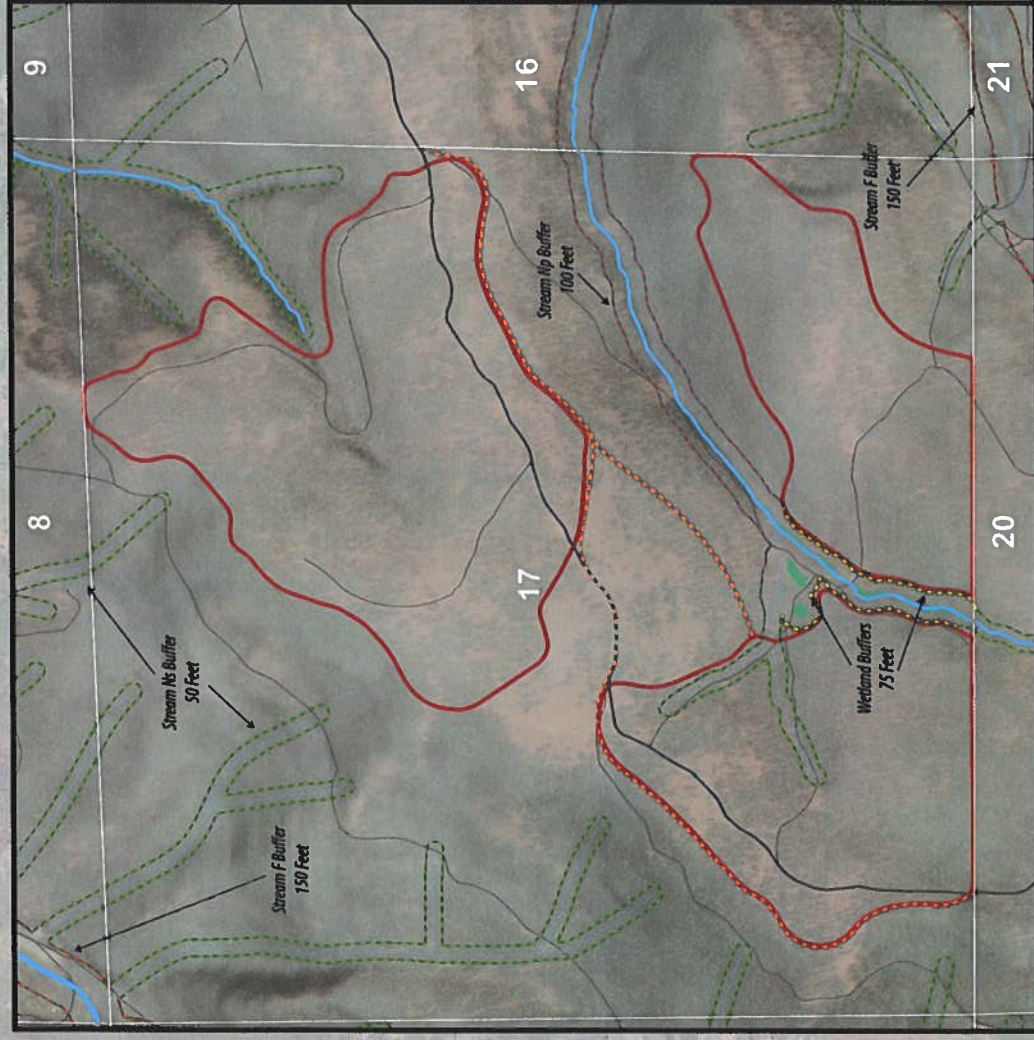
# Wheeler Ridge LLC - Section 17



**Figure 6. Wetland and riparian assigned buffers for low intensity development, Section 17.**

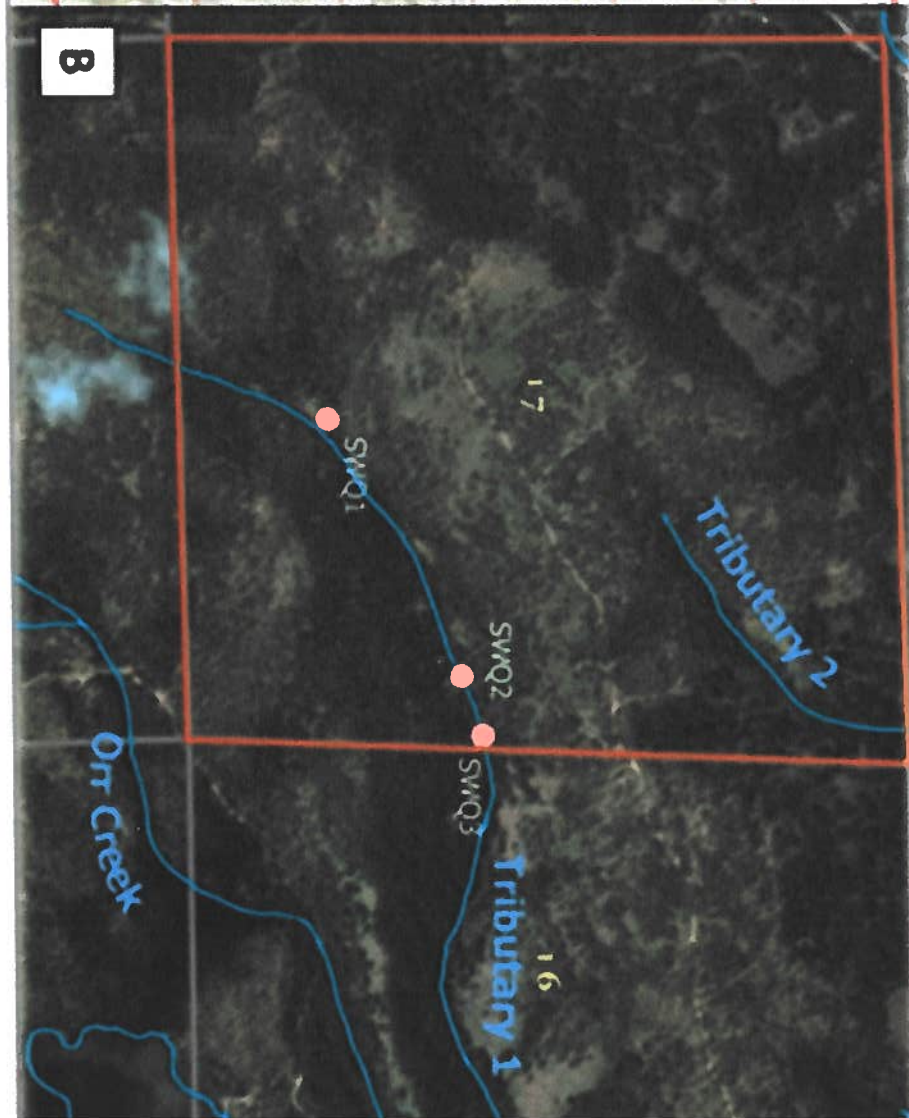
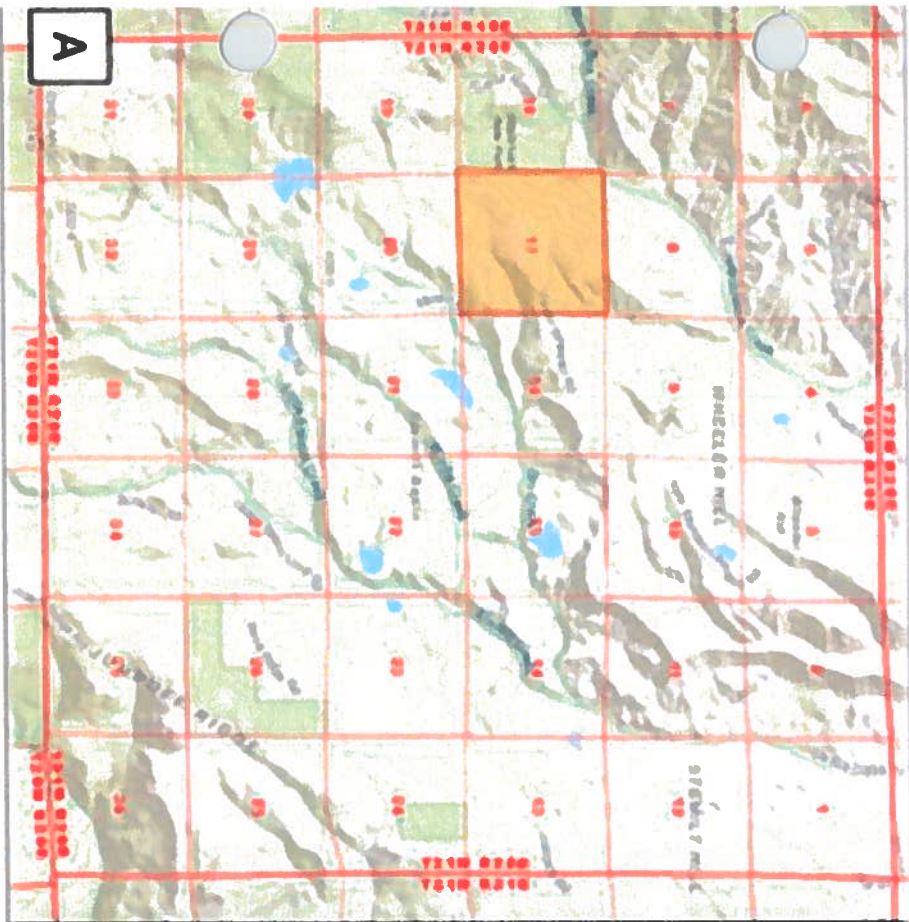


# Wheeler Ridge LLC - Section 17

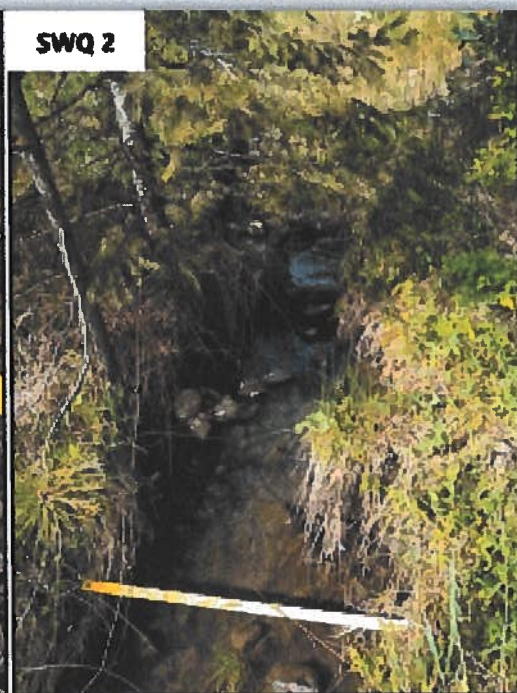


**Figure 7. Data collection vicinity map, Section 17 with hydraulic and water quality locations.**





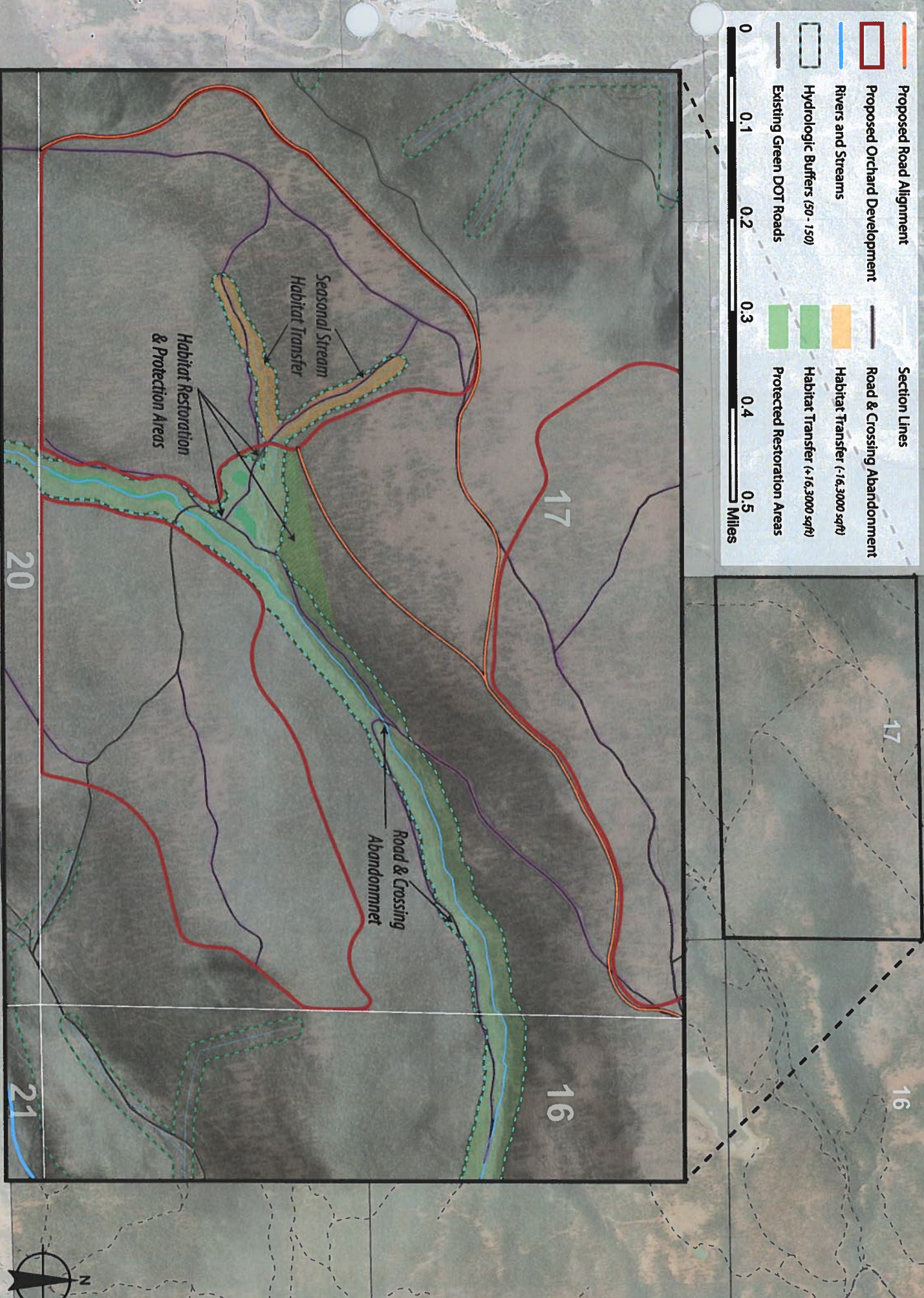
**Figure 8. Vicinity photographs of sampling locations SWQ1, SWQ2, and SWQ3 within Tributary 1.**





**Figure 9. Habitat transfer of an estimated 16,300 square feet from seasonal stream conveyance buffer impacts to provide predicted flows to the perennial stream plus restoration of up to 48 acres of wetland-meadow habitat.**

# Wheeler Ridge LLC - Section 17



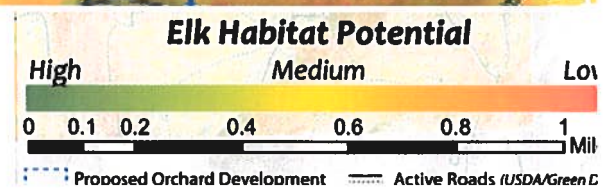
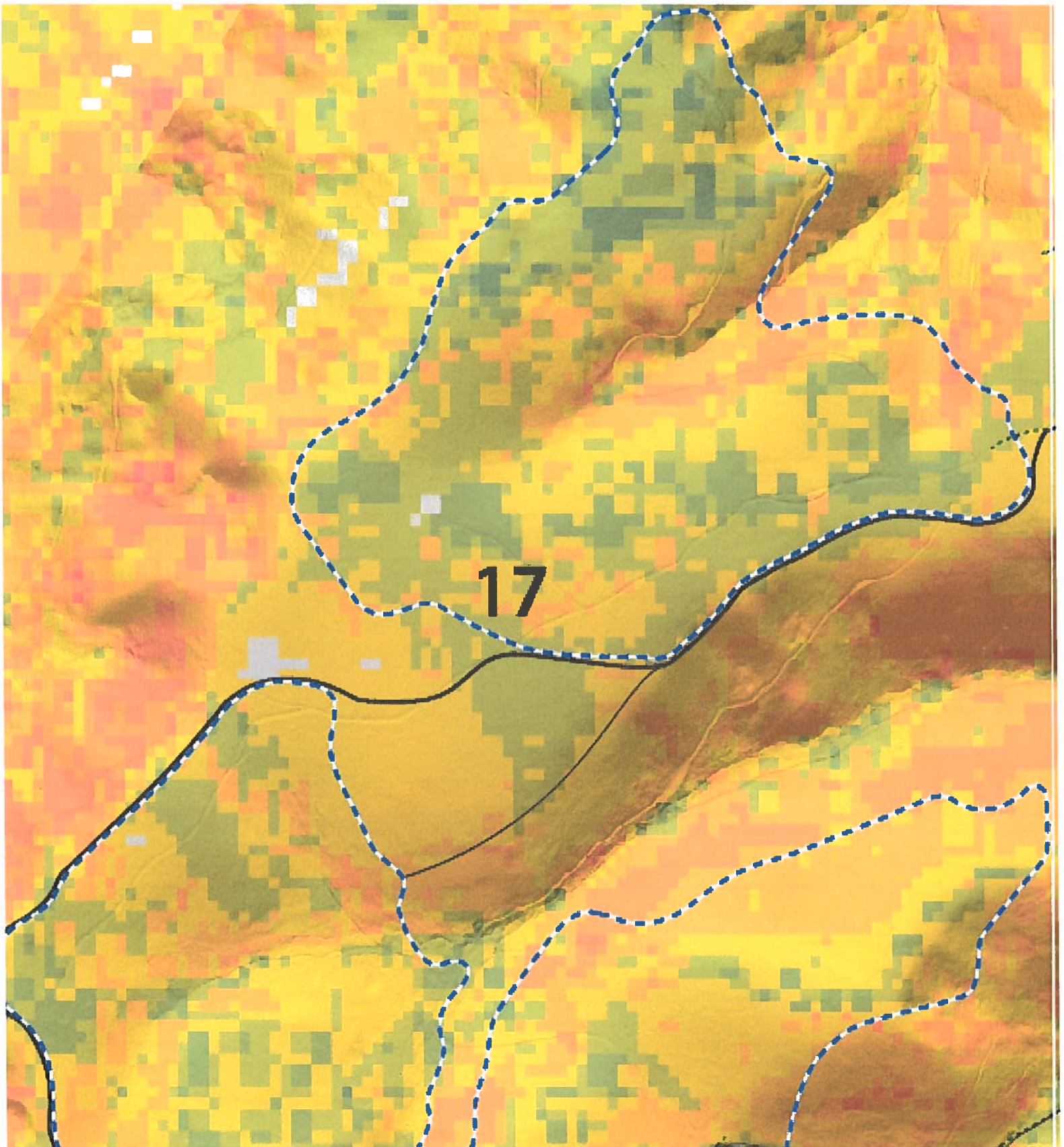
**Figure 10. Predicting potential elk habitat in the Stemilt Basin using specific habitat attributes (CORE GIS, 2008).**





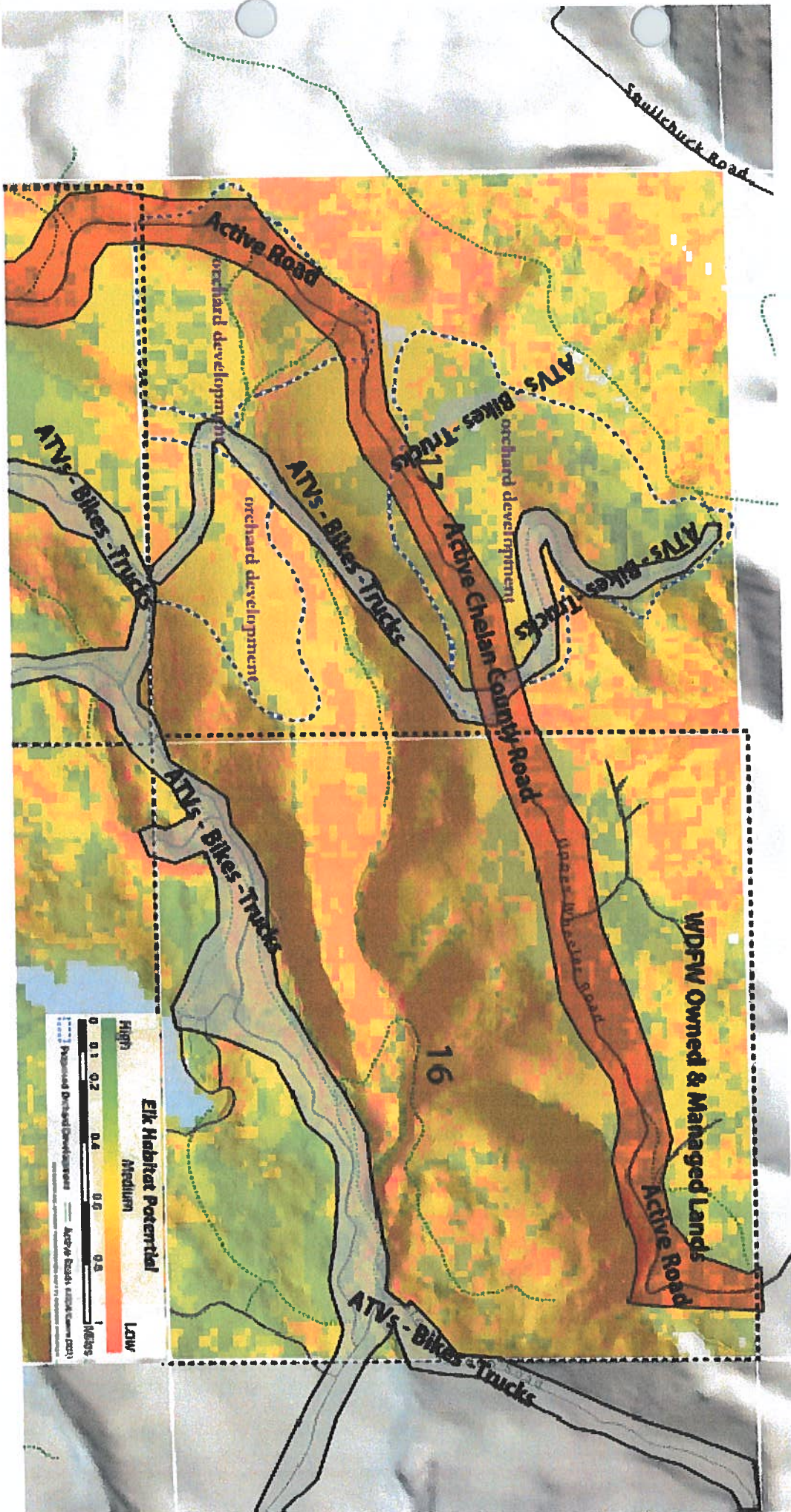
**Figure 11. Predicting summer elk habitat potential on Section 17.**





**Figure 12. Summer elk habitat potential on Section 17 with existing pressures from motorized uses (human disturbance).**





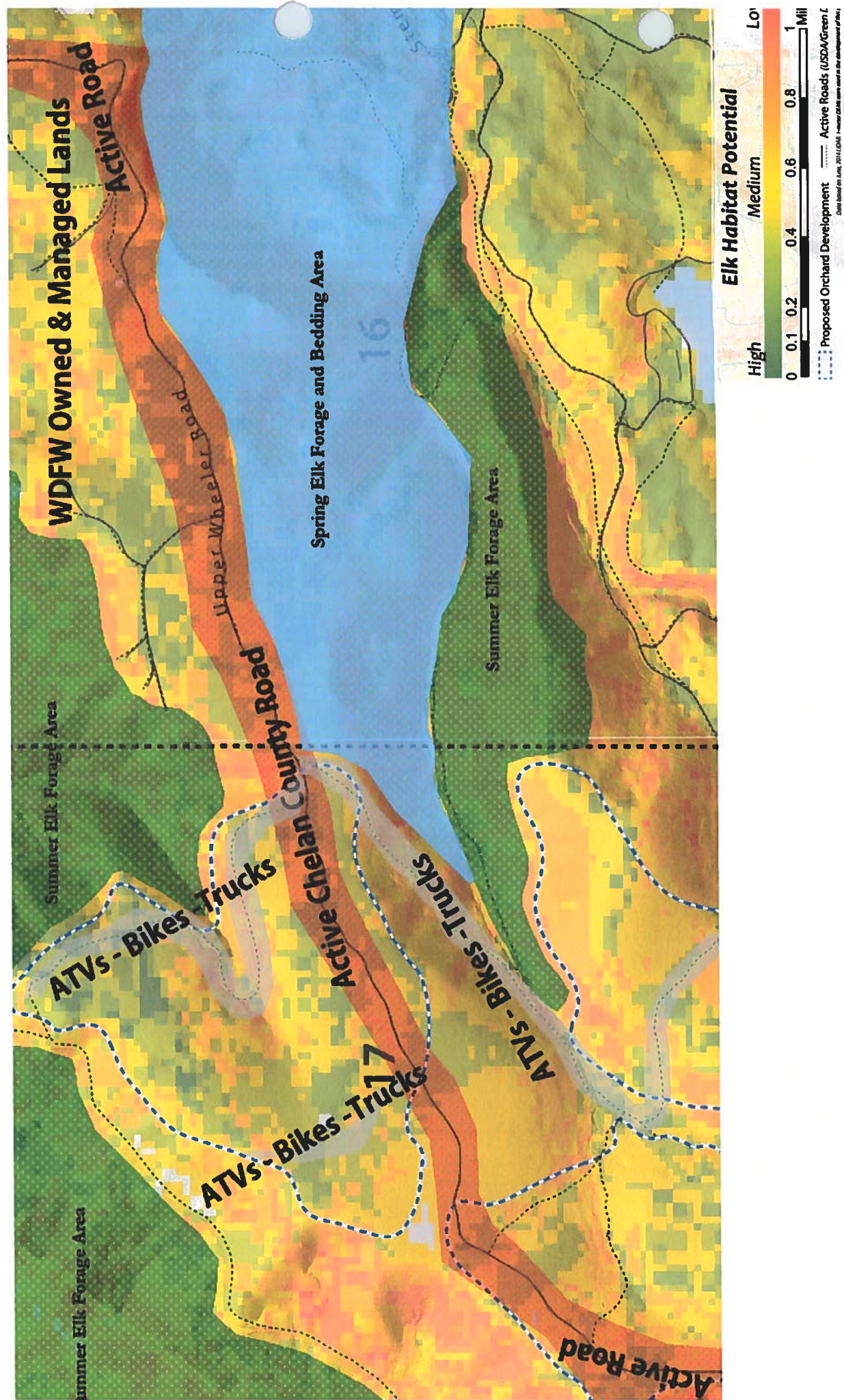
**Figure 13. Elk bedding observed in Section 16 and Section 17 in September 2018 (Shiflett, 2018).**





**Figure 14. Predicting potential elk habitat within the proposed project area using habitat attributes overlaid with known seasonal elk occurrences on Section 17 and Section 16 (SCJ Alliance, 2018; Shiflett, 2018).**





**Figure 15. Example of typical inflatables used to deter birds with limited noise (Source: Inflatable Dancer, Fruit Growers New, 2018).**

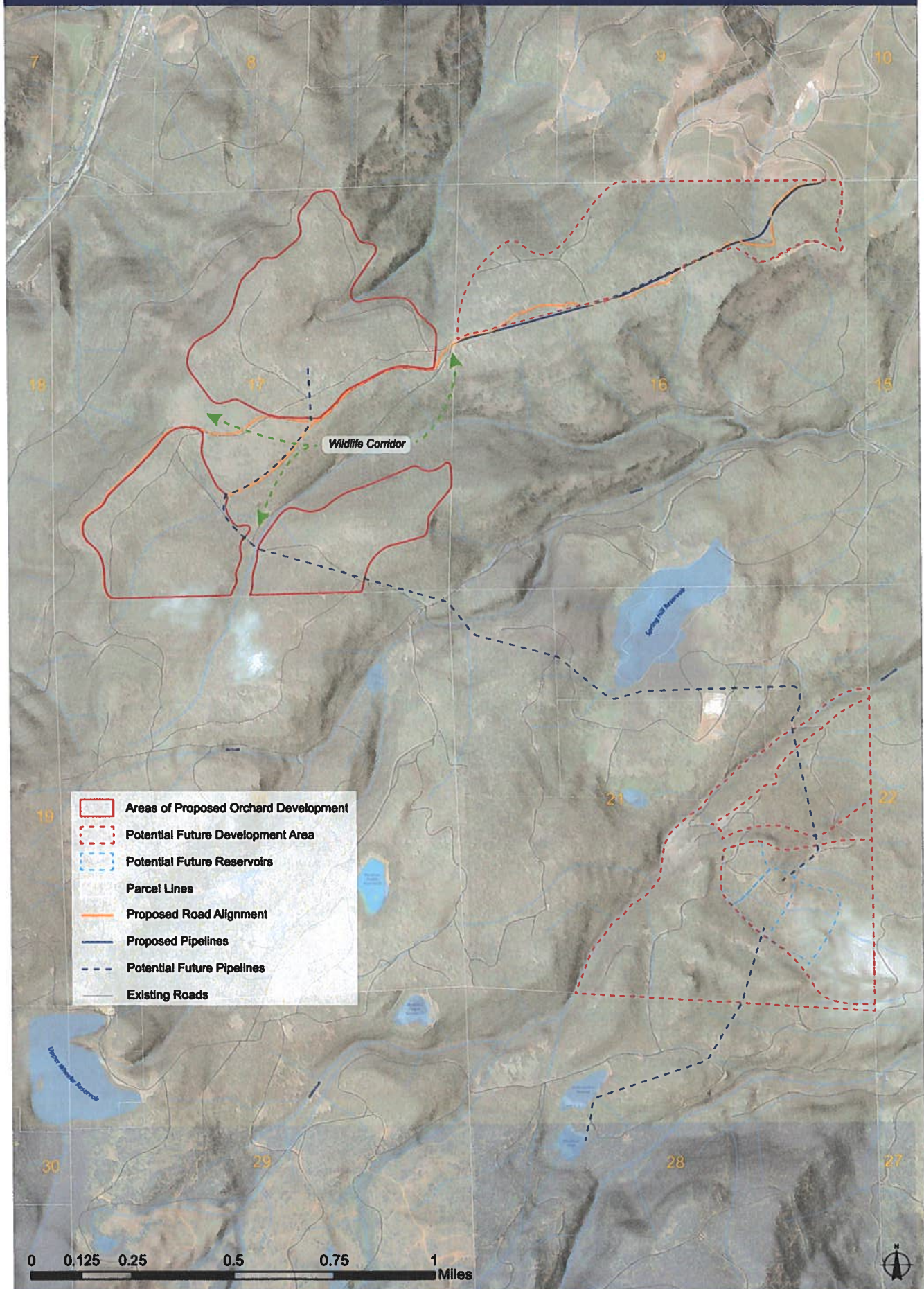




**Figure 16. Future potential orchard development if Phase 1 is successful at growing fruit.**



# Wheeler Kidge LLC



**ATTACHMENTS**

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