









Appendix F – Project Descriptions and Concept Maps


The table below contains project descriptions. The table is followed by project concept maps.



Reach	Project Name	Project Code	Project Description	Considerations	Photo
Wind 1 and 2	Wind River Confluence	W1	Confluence area contains open water, boat ramp, parking area, riprap shorelines, old bridge abutments, and sand bars. Future plans include moving boat ramp and parking area to southeast corner of mouth area. Once this occurs, convert former parking area\boat ramp and existing sand bars to multi-thread side-channel complex with vegetated islands. This would re-create delta features, increase margin habitat, and increase habitat complexity. Also look for opportunities to improve shoreline complexity at riprap banks throughout mouth area. Utilize old log raft logs that will be moved for new boat ramp work for habitat logs. Remove old concrete bridge abutments.	Mouth area is used by multiple user groups. Need to coordinate work with County/Port.	
Wind 2	Log Dump Bend	W2	Fill, levees, bank armoring, and docks affect river processes and habitat at the old log dump. At the outside of the bend on river-left, there is erosion of the high bank. Enhance the log dump area to re-create, to the extent possible, river delta dynamics and habitat conditions. This could include removal of the levee at the top end of the log dump, creating a multi-thread side-channel complex through the log dump pond (with vegetated islands), re-grading the right-bank floodplain to increase inundation, and removing or setting back bank armoring, including a section of sheetpile. Actions would also include re-establishment of native riparian and floodplain vegetation. These actions would take pressure off of the eroding left-bank; look for other opportunities to address left-bank erosion, but access is challenging.	Private lands. Work here would likely require land acquisition. Work on the left bank would be challenging given access conditions.	


Reach	Project Name	Project Code	Project Description	Considerations	Photo
Wind 2	In-Lieu Bend	W3	The inside of the bend contains side-channel scars and a backwater area at the downstream end. There is a large jam at the upstream end of the side-channel scar complex. Could reposition the wood in the jam, and use select excavation, to increase activation of the side-channel. Could also redistribute wood into mainstem jams or into the existing backwater area downstream. Could add wood to mainstem channel margins and to the apex of the mid-channel island downstream. Work with tribes to enhance riparian conditions and margin habitat at the In-lieu fishing area.	Important to avoid any main channel work that would increase erosion of the high and erodible right bank. In-lieu fishing uses will need to be considered.	
Wind 2	Indian Cabin Road Reach	W4	Uniform reach with riprap along left bank (along access road). Add large jams to right-bank bar to increase planform diversity and multi-thread conditions, and to potentially increase activation of right-bank floodplain/off-channel habitat. Add wood to left-bank riprap to enhance margin habitat. Remove old metal bridge supports.	High energy reach for mainstem jams. Effects on road would need to be assessed. Private Properties.	



Reach	Project Name	Project Code	Project Description	Considerations	Photo
Wind 5a	Stabler Bend	W5	<p>Activate the complex of channel scars (none are active at low flows). Could put ~20% of flow through here to take pressure off of Stabler Bend. Put in far left bank channel against the hillslope toe. Keep channel against hillslope at downstream end (in the trees). Revegetate open area at downstream end and control for invasives (mainly scotchbroom). Old Stabler log jams at upstream end beginning to deteriorate. At downstream end, some signs of additional erosion and undermining of jams. Possibly place more jams here and/or design a controlled neck cut-off to relieve pressure on this bend.</p>	<p>Depending on gradient and elevation, might be able to activate complex with large wood and select excavation only at the upstream end. Wetlands could be an issue if there is a need for excavation throughout length of side-channel complex. Any work in this area needs to keep in mind imminent avulsion risk across neck at downstream end. Site is private property. There is some interest in controlling Scotch broom but difficult access for owners.</p>	
Wind 5a	Stabler North	W6	<p>This is a long and straight uniform reach with glide habitat and very little cover. There is also high width-to-depth especially given recent bank erosion. Good opportunity for bank and bar apex jams to enhance split flows and channel complexity. Possible off-channel habitat enhancement by increasing activation of right bank floodplain. Good alcove potential at downstream end on right bank above private residence.</p>	<p>Possibly tough access across private property.</p>	



Reach	Project Name	Project Code	Project Description	Considerations	Photo
Wind 5a	Whisky	W7	Uniform reach with Jurzik cut bank at downstream end left-bank and semi-active right bank side-channel. Cut-bank is conglomerate plus mudstone with boulders on the lower bank and alluvium on the upper bank. There is some large wood at the downstream end already. Could mimic this further upstream along bank. Add large wood for complexity and anchor to boulders. Activate the right bank side channel more (currently not flowing). Add right bank margin jams and apex jams. Investigate activating the far right-bank floodplain/side-channel for possibly improving off-channel habitat and taking pressure off of Jurzik cut bank. Replant cleared riparian area on the left bank upstream of the Jurzik cut bank.	Possibly tough access across private property. Anchoring large wood along the cut-bank may be challenging. Activating far right-bank side-channel may be challenging given landowner permissions.	
Wind 5a	Cannavina	W8	Multiple private parcels with cleared riparian areas and uniform channel. Look for opportunities to replant riparian zones and add instream complexity using large wood.	Work will take cooperation from landowners.	
Wind 5c	Stump House	W9	This is a newly avulsed section of stream that is currently too dynamic to allow vegetation to establish. Large wood structure using large apex jams would help create and maintain islands and allow vegetation to establish. Could also add large key piece analogs or up-angled rootwads to capture wood. Most of the off-channel areas are fairly well connected but there are some opportunities to enhance connectivity at low flows.	Adjacent landowners that have not given permissions for surveys limits how much of the floodplain was investigated and will likely limit the larger scale opportunities here. UCD has previously placed some wood in a left bank side-channel in this reach.	



Reach	Project Name	Project Code	Project Description	Considerations	Photo
Wind 5c	Beaver Campground	W10	<p>Levees, fill, and armoring associated with Beaver Campground have significantly impacted floodplain connectivity, off-channel habitat, and instream habitat. There are multiple opportunities for restoration, including: 1) Removal of concrete bulkhead armoring and removal/set-back of associated levee on river-left upstream of CG - creation of low floodplain surface and riparian buffer; 2) Removal/set-back of left bank levee extending downstream along CG, or activation of adjacent side channel; 3) Activate right bank side-channel; 4) Activate left bank floodplain and off-channel complex at downstream end; 5) Add complexity to the main channel throughout, including apex and bank jams,</p>	<p>Campground is the primary constraint. Could it be reconfigured to allow for levee set-back? Past UCD work is located on left bank at lower end, including buried jams, near and at inlet to left bank side channel complex. Goal was to keep the main channel from occupying the side channel but to keep the side channel active. Would be good to increase the level of activation of this left bank side channel complex. There is groundwater flow at lower end of right bank side-channel scar. Could be good to preserve or enhance GW conditions rather than fully activate side channel.</p>	 <p>Concrete bulkhead at upstream end of Beaver CG, river-left.</p>



Reach	Project Name	Project Code	Project Description	Considerations	Photo
<p>Wind 5c</p>	<p>Beaver North</p>	<p>W11</p>	<p>Uniform reach with disconnected side channel and riprap bank armoring. Opportunities include: 1) Construct alcove at existing left-bank side-channel outlet at upstream end (groundwater inputs); 2) remove riprap on river left (from Wind River Road) at upstream end of armoring and set back, closer to the road. Create a lower floodplain and revegetate; 3) Activate large side channel scar on the right bank using a large apex jam on bar near the inlet and a left bank margin jam. Load the side channel with large wood. There is a good bar apex/riffle crest from which side channel can be activated. Currently there are large old-growth pieces at jam at head of side channel which can be repositioned and used. Consider shifting main channel into this alignment to remove channel from riprap and bulkhead at Campground. Another option is to enhance the lower end as a groundwater channel; 4) Add wood/complexity in the form of bank and bar apex jams throughout.</p>	<p>Modifying road riprap where road is close would be challenging. May have to enhance in place. There is bedrock located in this reach and needs to be considered when planning earthwork.</p>	 <p>Left-bank riprap</p>  <p>Side-channel scar right-bank</p>



Reach	Project Name	Project Code	Project Description	Considerations	Photo
Wind 5c	Big Butte	W12	Very little mainstem or off-channel complexity. Opportunities include: 1) Increase mainstem complexity throughout reach by adding bank and bar apex jams. At upstream end, add wood to right bank at large pool. At downstream end, there are some buried bank jams - add more and larger bank as well as apex jams; 2) Might be opportunities to activate side-channels including on the left bank at upstream end and on right bank at downstream end. Or create alcoves at side-channel scar outlets.	Access might be difficult at upstream end.	



Reach	Project Name	Project Code	Project Description	Considerations	Photo
<p>Wind 5d and 5c</p>	<p>Hatchery Reach</p>	<p>W13</p>	<p>There is abundant potential for restoration of channel and floodplain processes here. Several sub-projects are possible: 1) Remove or set back the levee on left bank near the hatchery to reconnect the left-bank floodplain; 2) Add large wood (apex and big bank jams) to main channel and active side-channels throughout; 3) Remove fill at head of disconnected right-bank side-channel at upstream end of project reach; 4) Reconnect off-channels, side channels, and floodplain wetlands in the right-bank floodplain across from hatchery (possibly connecting up with side-channel described in #3) where large wood appears to have been placed to prevent channel movement to the west and away from the hatchery entrance; 5) Remove, modify, or enhance left-bank riprap downstream from hatchery entrance; 6) Enhance connectivity of right-bank side-channel complex across from hatchery entrance (re-enters downstream at project terminus) using select excavation and a bar apex jam at inlet; 7) Add complexity (apex and bank jams) at pool downstream of riprap; 8) Create cold water alcove on left bank where Tye Springs reenters channel.</p>	<p>The hatchery and associated infrastructure presents significant constraints. The contemporary need and function of levees, riprap, and other hydromods needs evaluation to understand realistic opportunities. Past work appears to have been conducted to maintain the main channel in its current alignment, presumably to maintain fish access into hatchery entrance channel. Investigate options for restoring floodplain and channel migration zone processes while maintaining fish access.</p>	 <p>Left-bank levee upstream of hatchery</p>  <p>Floodplain wetland complex west bank across from hatchery</p>



Reach	Project Name	Project Code	Project Description	Considerations	Photo
Wind 5d	Mineral Springs Bridge Reach	W14	This reach is incised and disconnected from floodplain due to upstream bridge/fill and levee/canal on river-left. Reach is straight, cobbles and boulders, steep riffles and glides, high energy flow, and very little complexity. No off-channel habitat. Boulders probably provide some decent steelhead cover. There are some existing logs placed along margins (cabled and/or buried). At a minimum, add more large wood (as has been done) but bigger and more aggressive to create deposition areas and habitat. Also look for opportunities for off-channel enhancement and floodplain reconnection, potentially using jams to activate floodplain and modifying left bank levee/canal system or activating the left-bank side channel scar as a low flow side-channel.	High energy reach. Log jams will need significant ballast to maintain integrity. Work to the east of the channel could affect diversion canal and berm. Need to evaluate current use and need for canal.	
Wind 5d	Mineral Springs Road Bridge	W15	The bridge and associated approach fill on the west side severely disconnected the floodplain and has locked the channel into its current alignment, causing incision, simplification, and lack of off-channel habitat here and downstream. Look for opportunities to increase connectivity through modifying the road fill/crossing or mitigating for these impacts by creating new off-channel habitat features.	Modifications to road fill or bridge would be expensive.	



Reach	Project Name	Project Code	Project Description	Considerations	Photo
Wind 5d	Wind River below Trapper Creek Confluence	W16	There is past log jam work through here but more could be completed. Add large apex jams - piling or backfill burial ballasted. Add jams to left bank (be strategic and leave gaps where good recruitment would still occur). Place apex jam on bar towards downstream end.	There are cabled logs just downstream of Trapper Creek on the right bank and an existing apex log jam. There is a newly activated side channel on right bank, with some old restoration logs washed down near here. There is other evidence of placed logs moving - the ones in place are cabled or well-buried. There is a dispersed recreation area on the left-bank throughout.	
Wind 6a	Wind River below Dry Creek Confluence	W17	This is a very uniform glide with very little in-channel or margin habitat complexity. Add large wood to right bank to create pool scour and cover. Add apex jam just above Trapper Creek confluence.	There is an existing dirt access road along the river-left bank.	



Reach	Project Name	Project Code	Project Description	Considerations	Photo
Wind 6c	Falls Confluence Highway Slope	W18	Over approximately a half-mile, the high road prism abuts the channel, with intermittent (sometimes heavy) riprap and impacted riparian vegetation. Look for opportunities to establish woody vegetation on the highway slope and to increase margin complexity in the channel using large wood. There are a few pieces of placed large wood at the base of the riprap from old projects.	Riparian work on highway slope could be challenging and large wood margin complexity along the riprap may not be worth it.	
Wind 6d	Mining Downstream Road Contact	W19	A 50' riprap section appears to have been an emergency placement after big firs were recruited. Riprap is intermittent, with areas of failure. This is a multi-thread channel with some flow farther east - very complex. Shift the channel away from highway toward valley-left using log jams. Use jams along highway to prevent re-occupation of channel adjacent to highway. Establish a riparian buffer between river and road. Add large wood key pieces throughout the channel to capture numerous smaller deciduous large wood in the channel. There is a second riprap section along road at downstream end where margin complexity could be increased, but road bank is high and canyon is starting here so there is less impact or opportunity for improvement.	There are road integrity and safety issues at these sites, which could boost importance and help with funding.	



Reach	Project Name	Project Code	Project Description	Considerations	Photo
Wind 6d	Mining Middle Road Contact	W20	Two locations of highway riprap along right bank. At the downstream location, the riprap has failed or might soon fail. Near RM 22.9 the riprap is failing and a jam is putting the highway at risk. There is an old dry channel in the left bank floodplain that would be an easy place to shift the channel. Shift the channel away from highway toward valley-left using log jams. Use jams along highway to prevent re-occupation of channel adjacent to highway. Add large wood key pieces throughout the channel to capture numerous smaller deciduous large wood in the channel.	There are road integrity and safety issues at these sites, which could boost importance and help with funding.	
Wind 6d	Middle Butte Fan Large Wood	W21	Channel is currently very uniform and single thread. It has a higher gradient and is more confined from left bank fan. It's likely a constriction/valley grade control for depositional reach upstream. Young alder and maple are present on the right bank floodplain (less than 10" diameter). The left bank is a higher disconnected surface (fan). Add large wood "key" pieces (~0.2 miles) for complexity and to create pocket pools and to retain gravels. Large wood placements would recruit small/young large wood.	Access from Wind River Highway or helicopter drop key pieces.	



Reach	Project Name	Project Code	Project Description	Considerations	Photo
Wind 6d	Mining Upstream Road Contact	W22	Add large wood jam to right bank at the upstream end of the riprap. Possibly force river channel to shift into left bank floodplain (depending on elevation).	Potential to shift channel into left bank at the upstream end might be more feasible than at other locations.	
Wind 6d	650 Road Fill	W23	There is an old bridge approach fill/levee causing severe floodplain disconnection on right bank. A concrete abutment is located at the end of the fill approximately 10' from the active channel. Riprap is also located along the edge and at the end. A concrete abutment and road fill is also located on the left bank, with a couple of pilings still present. The left bank has a higher surface (above the floodplain elevation) so the encroachment on the floodplain is not as severe. Also present nearby at the end of the 650 spur road is a dispersed camp site with a 40' long berm and riprap. Remove right bank bridge approach fill/levee. Also remove left bank approach (at least the fill closest to river). Add instream habitat complexity - key pieces to capture alders and maples that have been recruited and will be coming down.	This is the old highway alignment. There is good access from spur road off of Wind River Highway.	


Reach	Project Name	Project Code	Project Description	Considerations	Photo
Wind 6d	Middle Mining LW	W24	Add large wood key pieces to help capture the numerous alders and maples that have been recruited and will be coming down over time.	Access via old hwy alignment (now abandoned - 650 spur road) or via helicopter placement.	
Paradise Creek	Paradise Campground Off-Channel Enhancement	P1	Right bank off-channel habitat potential. Excavate a low-flow side channel. Remove old push-up levee extending approximately 200 feet along right bank. Add apex jam (use existing LW) to encourage erosion on the left bank and recruitment of large trees and floodplain activation upstream at the top of the existing right bank bar.	Potential effects to eroding left bank along campground will need to be evaluated.	


Reach	Project Name	Project Code	Project Description	Considerations	Photo
Paradise Creek	Paradise Bridge	P2	Increase the bridge span length to reduce floodplain constriction and increase the channel migration zone. Removing associated armoring would enhance margin complexity.	Costs may be prohibitive.	
Paradise Creek	Paradise Creek Large Wood	P3	Use LW jam(s) to aggrade channel and activate floodplain. Use existing large key pieces currently spanning the channel (not much wood but a few large (3'-4' diameter) pieces). There is an opportunity to maneuver these logs together, add additional wood (including, potentially, newly dead snag trees on site), to create a log jam behind existing key pieces. The goal would be to aggrade a slightly incised channel and activate the adjacent floodplain.	<p>Relatively large buffer (100'?) between stream and Wind River Highway, but floodplain would need to be evaluated for hazards to infrastructure. There is a bridge downstream.</p> <p>Past incision indicated by inset floodplain with lower current bankfull width. Alders on lower surfaces potentially from 1996 flood. New signs of aggradation on lower surface might signify channel is on an aggrading trend.</p>	



Reach	Project Name	Project Code	Project Description	Considerations	Photo
<p>Dry 1</p>	<p>Lower Dry Creek</p>	<p>D1</p>	<p>This project site is between the mouth and the beginning of the bedrock canyon. It is low gradient and alluvial with large active gravel bars and active scrolling. Needs large wood structure. There has been past work through here, including margin log placements at the upstream end and an engineered jam near the downstream end. Opportunities include: 1) Add wood, either construct margin and apex jams or add large key pieces that can collect smaller wood over time. Place jams to strategically erode banks where good tree recruitment would occur; 2) Use jams and select excavation to activate floodplains, side-channels, and alcove habitat. Lots of opportunity through here.</p>	<p>The effects of seasonal subsurface flow on fish needs to be evaluated before performing work here.</p>	
<p>Dry 1</p>	<p>Dry Creek Upper Bedrock Channel</p>	<p>D2</p>	<p>Low complexity and low large wood numbers. More confined and less natural floodplain, but low gradient and has potential to have good rearing and spawning habitat. Add key pieces of large wood to collect smaller debris and form jams. Jams would provide rearing cover as well as retain spawning gravels.</p>	<p>Bedrock contacts through here and likely high energy in floods due to natural confinement. Redd scour is a potential issue. The effects of seasonal subsurface flow, and passage at falls downstream, needs to be evaluated before performing work here.</p>	



Reach	Project Name	Project Code	Project Description	Considerations	Photo
Dry 1	Spoil Bank	D3	<p>"Spoil Bank" forms cross-floodplain levee on river-left, which disconnects floodplain connectivity and limits off-channel habitat. There is past project work upstream in left-bank floodplain to enhance side-channel habitat. Remove spoil bank to reconnect floodplain. Create new side-channels and enhance connectivity to existing floodplain habitat in both the left- and right-bank floodplains. Enhance mainstem complexity (there is very little large wood throughout here). Plant riparian conifers (cedars) throughout.</p>	<p>Spoil bank material could be moved closer to road to avoid impacts to floodplain connectivity. Past project in left-bank floodplain could be enhanced by increasing level of activation of side-channel.</p>	
Dry 1	Upper Dry Creek Key Piece Supplementation	D4	<p>Reach has woody debris but most is small and riparian areas have young trees, mostly deciduous. Add large key pieces, possibly by helicopter to limit impacts. This would create stable key pieces to form and maintain jams. Good locations for placements are intermittent and do not encompass the entire project reach. Some areas through here have high complexity, with numerous smaller debris jams. Could also fall select large cottonwoods and maples (there are large ones >2' dbh).</p>	<p>Access from Dry Creek Road, may be challenging in places and will impact riparian zones.</p>	



Reach	Project Name	Project Code	Project Description	Considerations	Photo
Dry 2	Forest Road 64 Crossing	D5	<p>The FR64 fill bisects and disconnects the Dry Creek floodplain significantly (original floodplain is wide, ~300 ft here). Culvert at FR64 is an 11' diameter CMP with side baffles but no streambed material. The downstream 15' of culvert is fast shallow flow then 1.5 ft drop to a deep pool, which probably limits passage at some flows (high and low). There are also two log sills downstream of the outlet pool, presumably to address passage issues. Upstream of FR64 crossing there is nothing to do: old growth, well-connected floodplain, good riparian cover and structure, and lots of wood, off-channel habitat, and deep complex pools. Downstream of the 64 road is more downcut and the floodplain is not well connected. There is a more open canopy and less old growth, less off-channel habitat, less active gravel bars, and sediment starved from the road crossing. Replace culvert with long bridge or multiple large culverts to enhance passage and floodplain connectivity. Add channel-spanning jams to downstream channel to aggrade stream, activate floodplain, and provide habitat complexity.</p>	<p>Floodplain and habitat enhancements downstream from the road crossing will have limited value if the road fill remains in place and continues to create a sediment deficit. The effects of seasonal subsurface flow in lower Dry Creek on fish needs to be evaluated before performing work in upper portions of Dry Creek.</p>	
Eightmile	Eightmile	E1	<p>Channel is lacking large wood. Riparian zone at lower and middle is dominated by ≤ 6" alders. The vegetation and channel show evidence of past debris flow (2009?), with some related scouring/incision. The few large pieces of large wood are creating nice pools. There is a large debris flow jam just upstream of the reach. Adding key pieces will help to capture and retain this material as it makes its way downstream, and will help to activate floodplain surfaces. Fell large trees into channel (there are some on hillslope that would reach channel) and/or use helicopter to bring in large wood.</p>	<p>Challenging access for machinery</p>	



Reach	Project Name	Project Code	Project Description	Considerations	Photo
Trout Creek	Meadow Crest	T1	At top end, both sides of river, especially on the north bank, there is a wide (~100') forested riparian area and stream is continuous riffle. There are no log jams in this reach. Add one or more log jams to capture gravels and provide cover habitat. Existing trees may be able to be used for anchoring. In middle and downstream, also potential sites for log jams, possibly incorporating recent blow down (3-4 logs).	Private lands and potentially challenging access.	

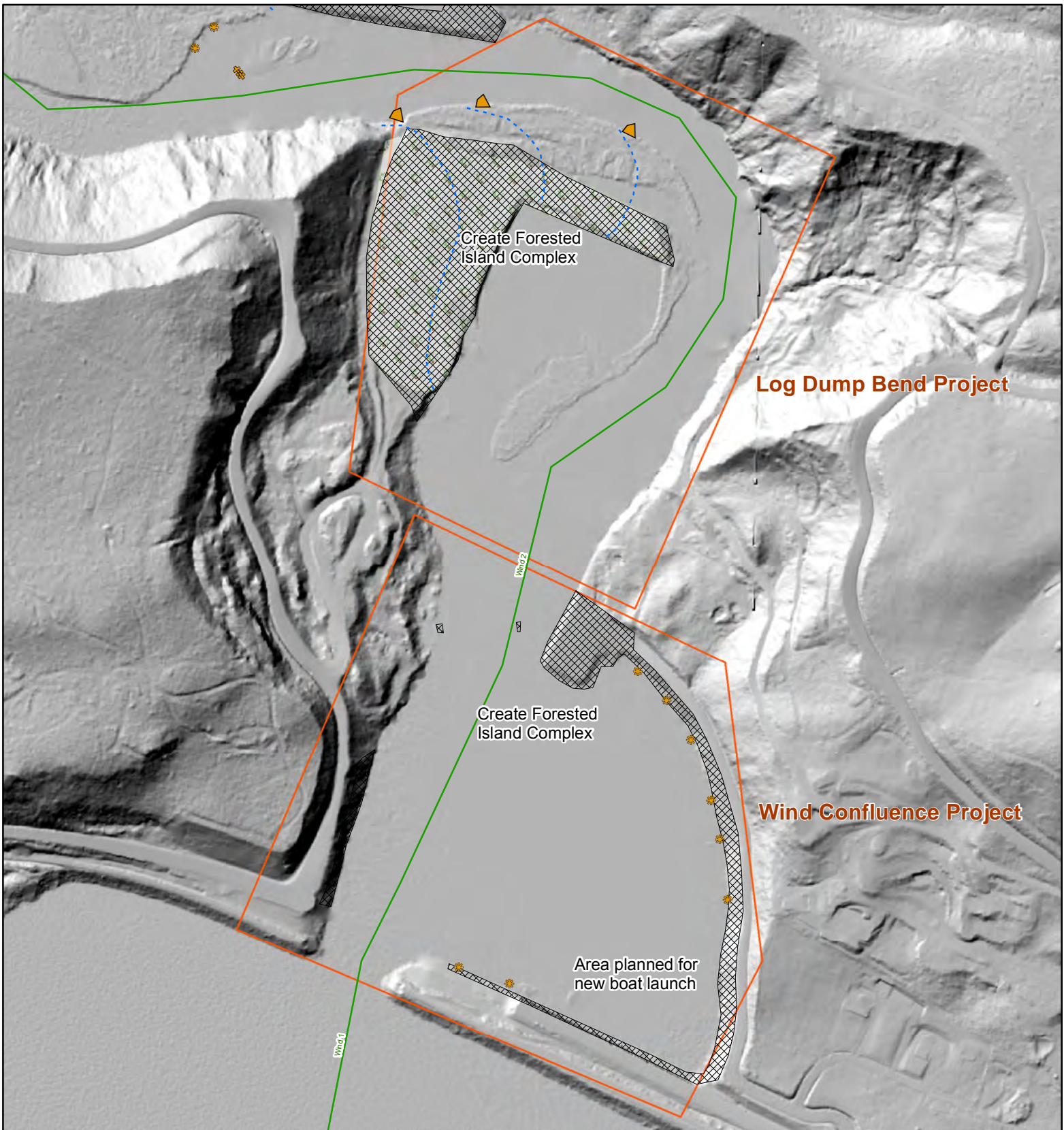
Reach	Project Name	Project Code	Project Description	Considerations	Photo
<p>Trout Creek</p>	<p>Summer's End</p>	<p>T2</p>	<p>This is the most complex area in this reach downstream of Hemlock Bridge. Conditions include a 150ft+ side-channel (left bank), a vegetating cobble bar, a steep south bank with existing mature conifers, and a couple of large logs currently on the south stream bank, plus a small row of alders near these logs. Add one or more engineered log jams in/across the north bank side channel or keyed into the alder screen and existing LWD on south bank. Maybe additional opportunities for log jams downstream.</p>	<p>Private lands and potentially challenging access. Potential access via Summer Road. Top photo shows north bank and existing log and main channel. Bottom photo shows portion of side channel, looking upstream.</p>	

Reach	Project Name	Project Code	Project Description	Considerations	Photo
<p>Martha Creek</p>	<p>Martha</p>	<p>M1</p>	<p>Upstream portion is young riparian forest and downstream portion is older forest. Add wood and jams to scour pools, capture gravels, activate floodplain, and create side-channel habitat. In middle and downstream areas, consider felling trees into channel from the occasional high banks. Place jams strategically to cause erosion to recruit large riparian conifers.</p>	<p>Federal and county property. Good access via nursery property. Seasonal subsurface flow conditions, and impact on fish, should be considered.</p>	
<p>Little Wind 1</p>	<p>Pipeline</p>	<p>L1</p>	<p>Confined valley with narrow alternating floodplain surfaces. Much of it is boulder/cobble plane-bed channel. Low large wood and young alder dominated riparian zone. Add large wood and small log jams, including excavation of scour pools. Similar to past work performed in downstream reach by UCD. This is essentially a continuation of that effort. Wood placements will add direct habitat, maintain scour pools, and help to activate floodplain surfaces and side-channels. Good opportunity for channel spanning jams to activate floodplains and create forced pool-riffle morphology. Could fell fir trees from nearby hillslopes and maneuver into channel.</p>	<p>USFS (Scenic Area) property. The river-right road is too high for access, but can move machinery up-valley by crossing back and forth and tracking up alternating floodplain surfaces. Felling and maneuvering into stream nearby firs using grip hoist may also be an option.</p>	

Reach	Project Name	Project Code	Project Description	Considerations	Photo
Little Wind 1	Berge Confluence	L2	Similar conditions as L1. A few long riffles with no habitat complexity. There is more wood through here than in L1, but several stretches are plane-bed with no wood. Selectively fell large firs from nearby hillslopes and maneuver into stream to help build jams to create scour pools, increase complexity, collect gravels, and activate the small floodplain surfaces and short side-channels. There also may be some downed wood (including spanners) that could be maneuvered into the channel.	Machinery access challenging. Likely accomplished using hand crews with grip hoists pulling down firs on hillslopes. Helicopter placement may also be an option.	
Little Wind 1	Dillon	L3	Similar conditions as L1 and L2. Reach contains some eroding banks with recruited wood spanning the channel. There is a bedrock channel at upstream end. Use grip hoist to maneuver existing downed wood into channel and to fell hillslope firs and place in channel. Good location for helicopter placement as well. At downstream end river-left, there appears to be a small push-up levee, but origin is unclear. Remove if possible or use jams to direct flow into levee to erode levee and activate the left bank low surface.	Machinery access likely not possible. Good location for helicopter placement of wood and/or using hand crews with grip hoists pulling down firs on hillslopes.	

Reach	Project Name	Project Code	Project Description	Considerations	Photo
Little Wind 1	Powerline	L4	This is above a downstream more confined reach with landslides, more abundant large wood, and boulder-bedrock channel. Beginning here, and continuing upstream, is a lower gradient channel with occasional broad floodplains. But the channel has incised into this floodplain in many areas and there are many plane-bed sections and low large wood numbers. The riparian and floodplain is primarily young alders. Place large wood and log jams to activate and reconnect the floodplain, reconnect side-channels, create complexity, trap gravels, force pool-riffle channels, and maintain scour pools.	USFS (Scenic Area) lands. Can obtain machinery access via an old logging road.	
Little Wind 1	Lower Headwater Flats	L5	Similar conditions and opportunities as L4. Long relic side-channels that are relatively disconnected due to channel incision. Channel contains long plane-bed riffles. There are large stumps and logging debris (cables) on site. Place large wood and log jams to activate and reconnect the floodplain, reconnect side-channels, create complexity, trap gravels, force pool-riffle channels, and maintain scour pools. Plant cedar to jumpstart succession under alder canopy; focus on planting along wide benches along stream.	USFS (Scenic Area) lands. Can obtain machinery access via an old logging road.	

Reach	Project Name	Project Code	Project Description	Considerations	Photo
<p>Little Wind 1</p>	<p>Middle Headwater Flats</p>	<p>L6</p>	<p>Similar conditions to L4 and L5. Wide floodplain benches but stream appears incised and somewhat disconnected. Add jams to activate floodplains and side-channels and to enhance channel complexity. Consider shifting main channel into more complex and sinuous alignment in floodplain. Depending on access conditions, either use helicopter, local felling of trees, or machinery.</p>	<p>USFS (Scenic Area) lands. Potential machinery access via old logging road, or from downstream access point. Otherwise, use hand crews with grip hoists or helicopter placements.</p>	
<p>Little Wind 1</p>	<p>Upper Headwater Flats</p>	<p>L7</p>	<p>Similar conditions to L4, L5, and L6. Wide floodplain benches but stream appears incised and somewhat disconnected. Add jams to activate floodplains and side-channels and to enhance channel complexity. There are some areas already exhibiting complexity that would be improved by additional wood. Depending on access conditions, either use helicopter, local felling of trees, or machinery.</p>	<p>USFS (Scenic Area) lands. Potential machinery access via old logging road, or from downstream access point. Otherwise, use hand crews with grip hoists or helicopter placements.</p> <p>Upstream of this site is more confined with more abundant large wood contributed from steep hillslopes.</p>	



Wind River Restoration Strategy

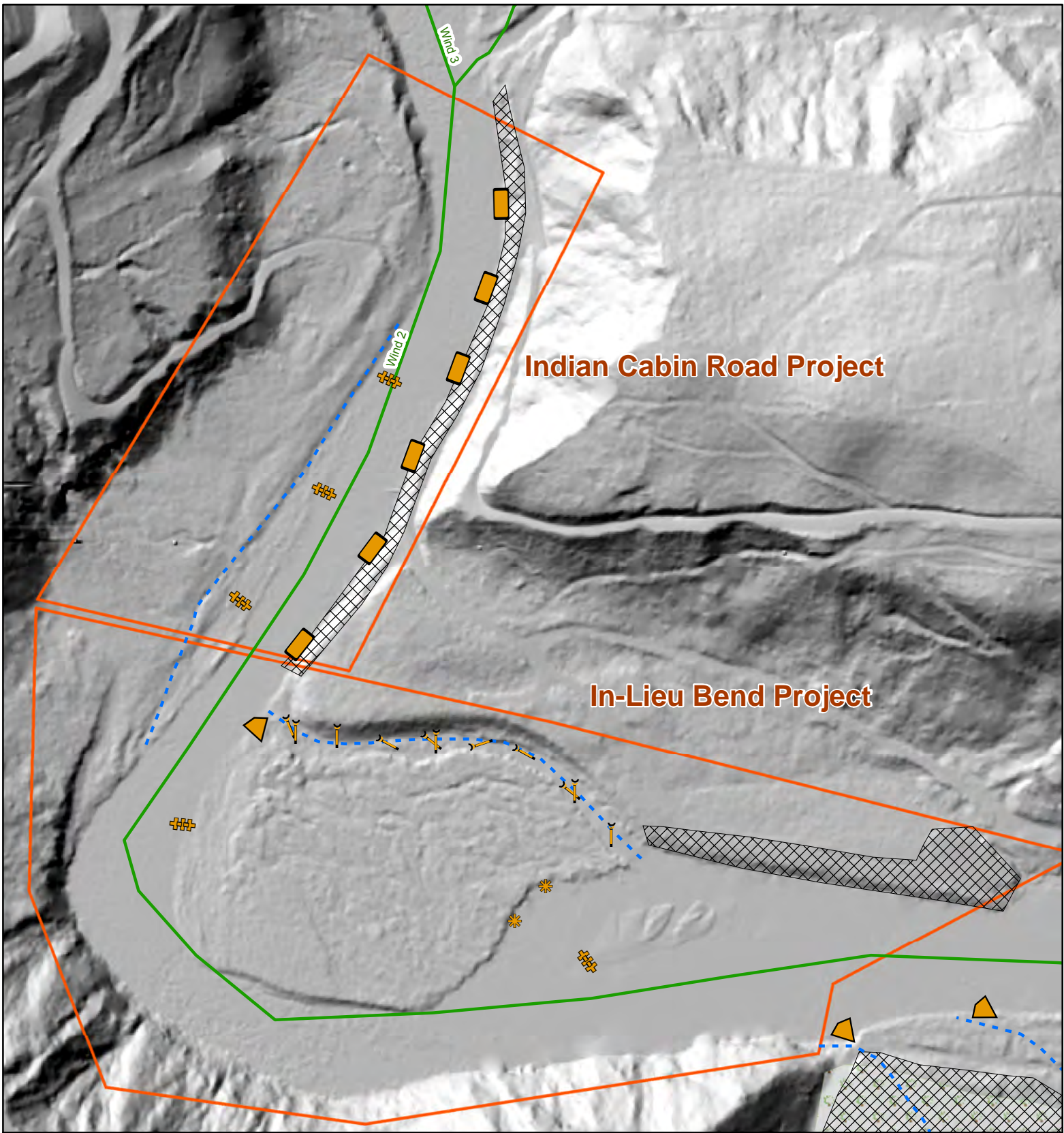
Lower Wind River - Downstream Projects



- EDT Reach
- Project Area

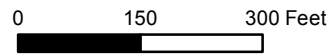
Project Elements

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> Bar apex log jam Large wood capture structure Individual log placement Large wood margin complexity | <ul style="list-style-type: none"> Channel margin log jam Channel Spanning Structure Whole tree placement | <ul style="list-style-type: none"> - - - Enhance side channel connectivity Removal/modification of fill or armoring Riparian revegetation |
|--|---|--|



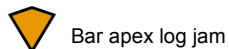
Wind River Restoration Strategy

Lower Wind River - Upstream Projects



- EDT Reach
- Project Area

Project Elements



Bar apex log jam



Large wood capture structure



Individual log placement



Large wood margin complexity



Channel margin log jam



Channel Spanning Structure



Whole tree placement



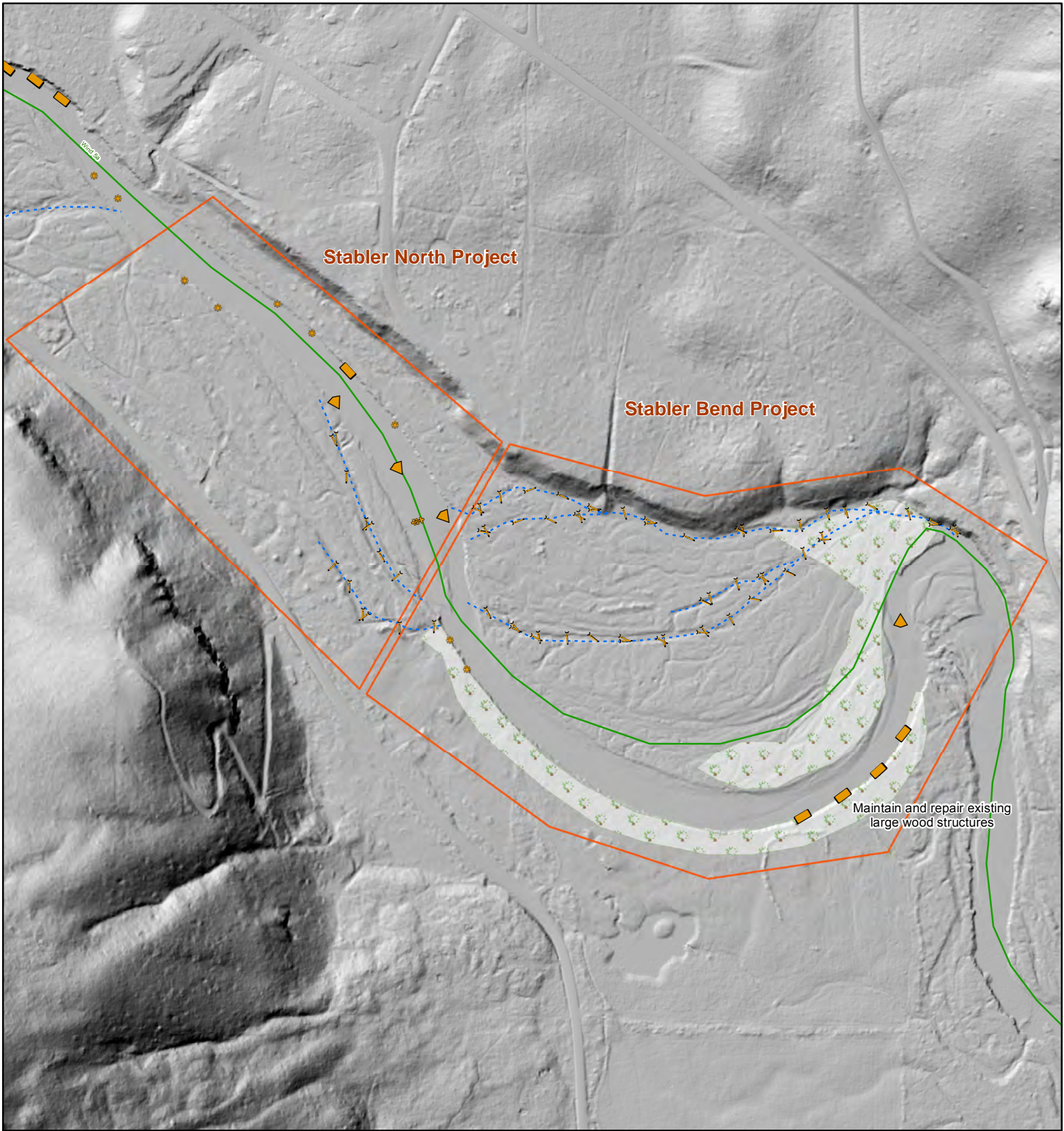
Enhance side channel connectivity



Removal/modification of fill or armoring

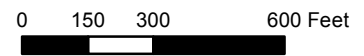


Riparian revegetation



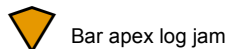
Wind River Restoration Strategy

Wind River - Stabler Area Projects



- EDT Reach
- Project Area

Project Elements



Bar apex log jam



Large wood capture structure



Individual log placement



Large wood margin complexity



Channel margin log jam



Channel Spanning Structure



Whole tree placement



Enhance side channel connectivity

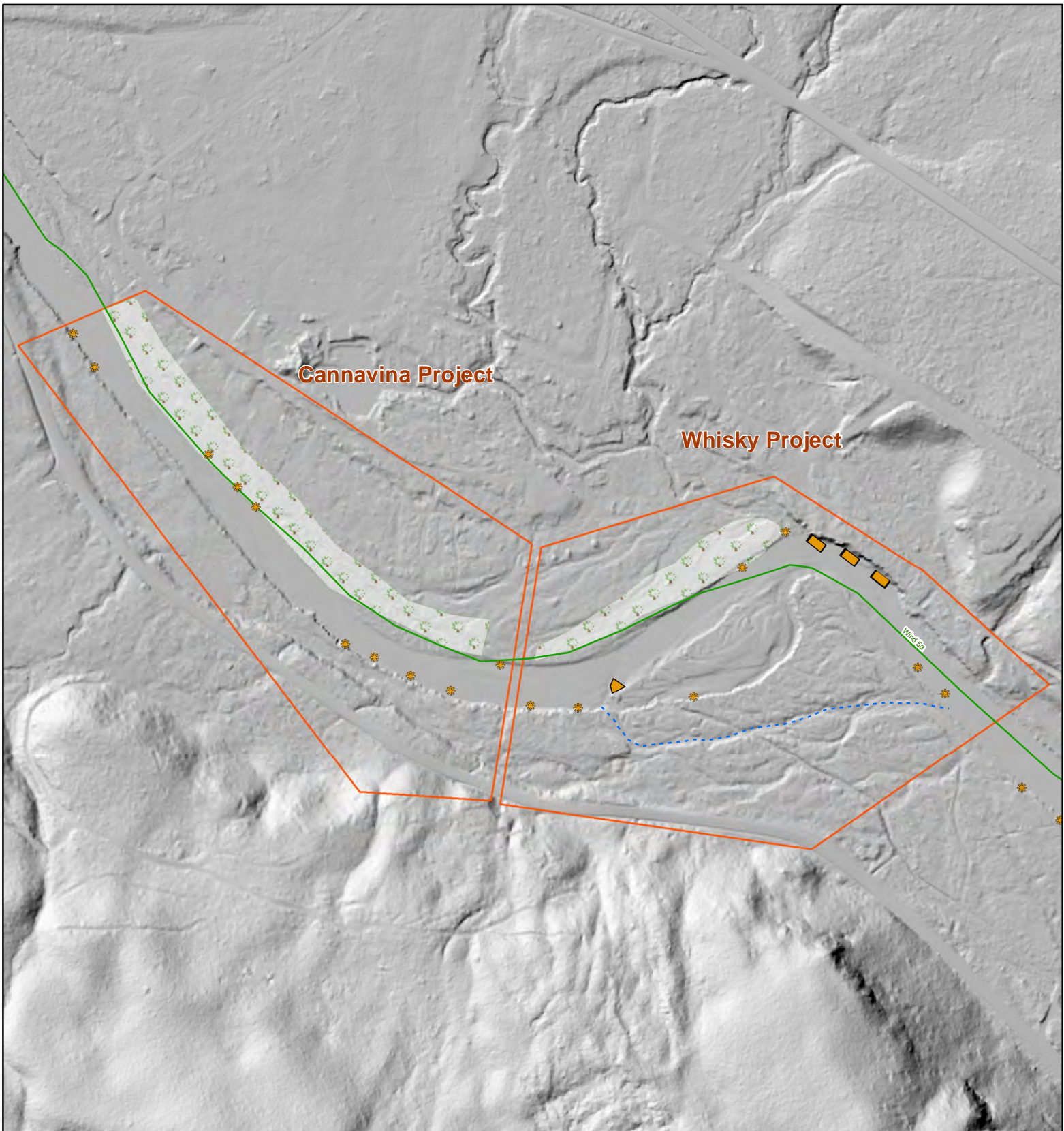


Removal/modification of fill or armoring



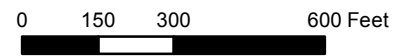
Riparian revegetation

Maintain and repair existing large wood structures



Wind River Restoration Strategy

Wind River - Cannavina & Whisky Projects



- EDT Reach
- Project Area

Project Elements

- Bar apex log jam

- Large wood capture structure

- Individual log placement

- Large wood margin complexity

- Channel margin log jam

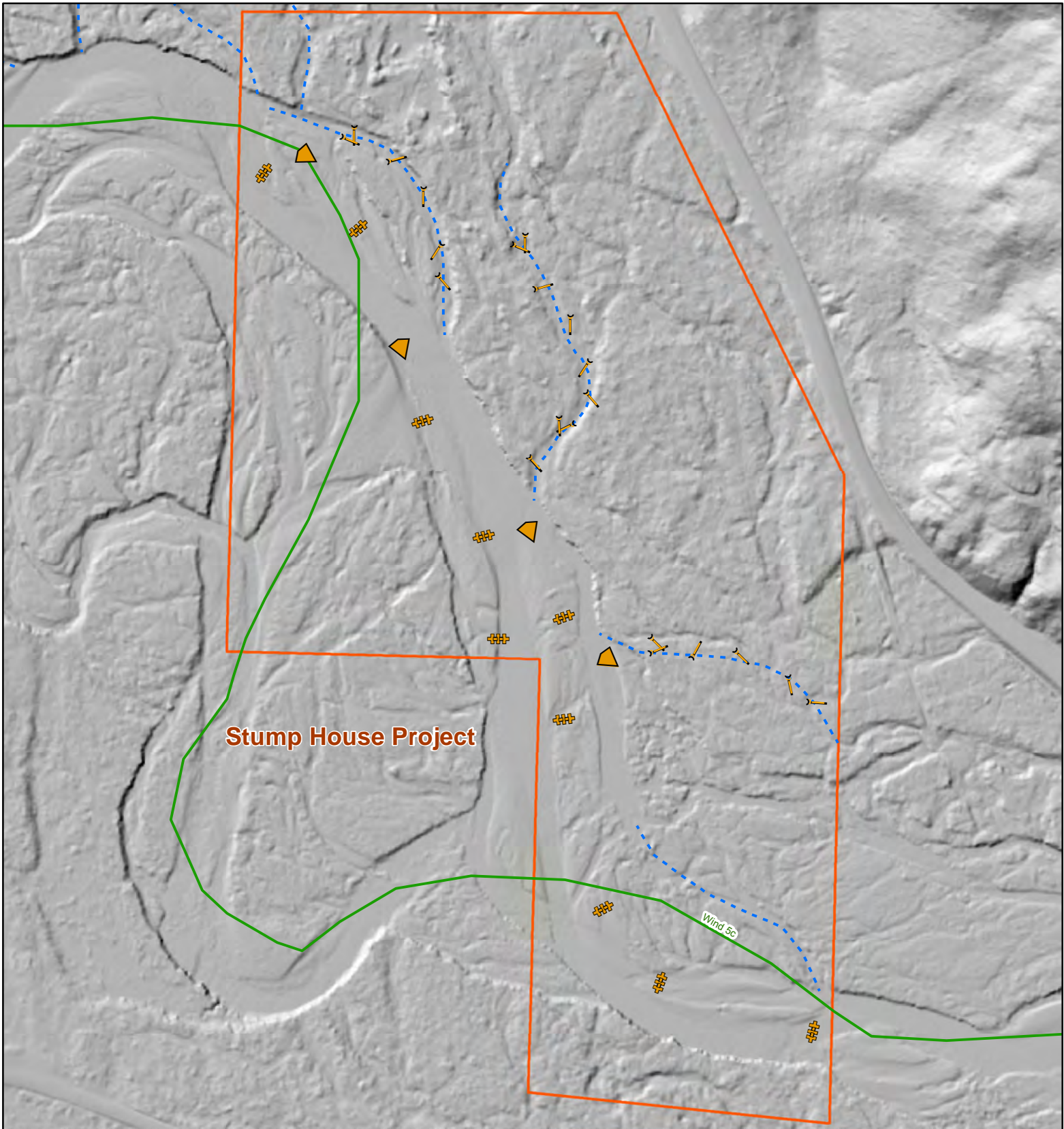
- Channel Spanning Structure

- Whole tree placement

- - - Enhance side channel connectivity

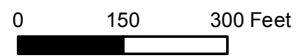
- Removal/modification of fill or armoring

- Riparian revegetation












Wind River Restoration Strategy

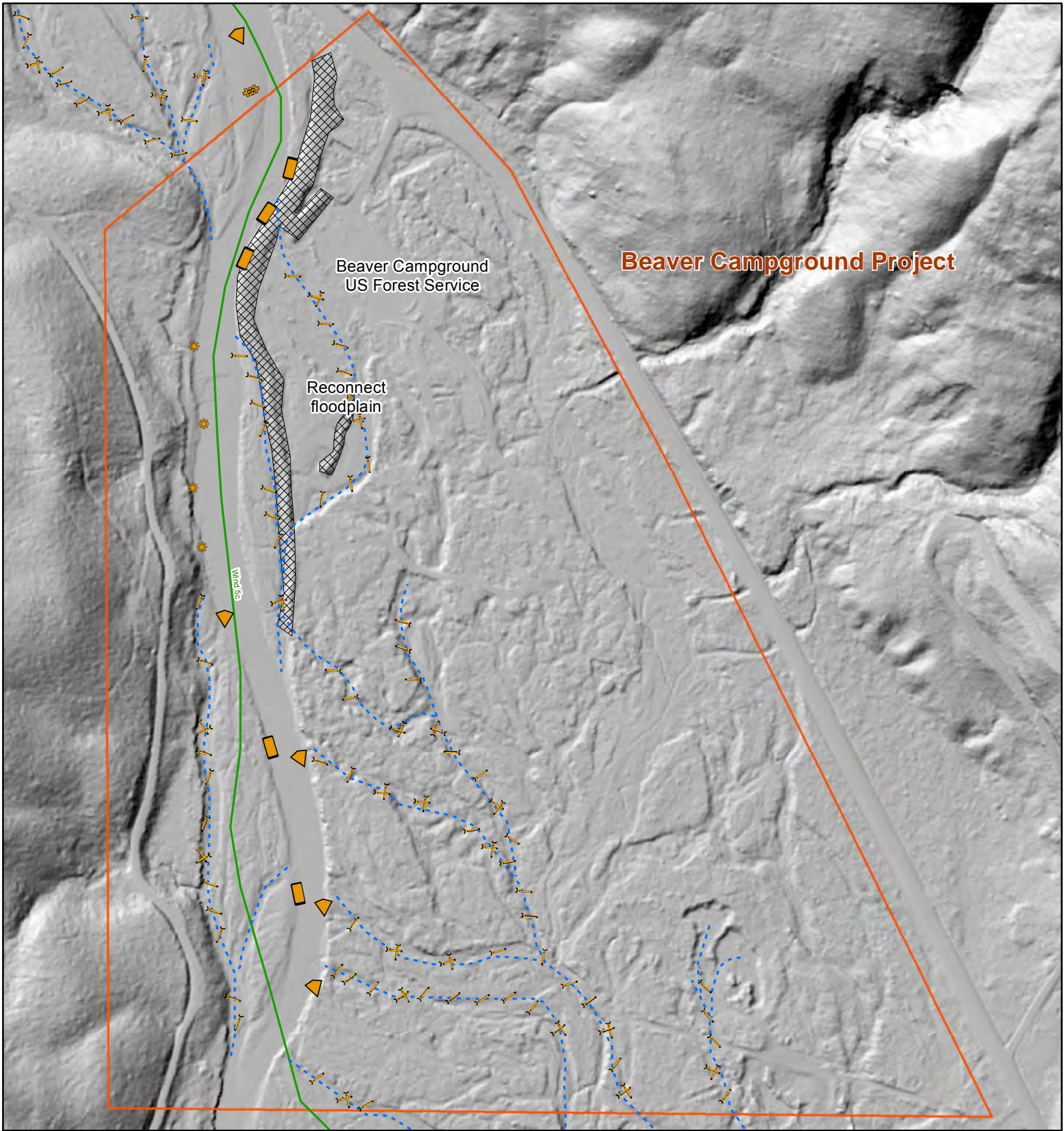
Wind River - Stump House Project



- EDT Reach
- Project Area

Project Elements

- | | | |
|--|--|--|
| <ul style="list-style-type: none">  Bar apex log jam  Large wood capture structure  Individual log placement  Large wood margin complexity | <ul style="list-style-type: none">  Channel margin log jam  Channel Spanning Structure  Whole tree placement | <ul style="list-style-type: none"> - - - Enhance side channel connectivity  Removal/modification of fill or armoring  Riparian revegetation |
|--|--|--|



Beaver Campground Project

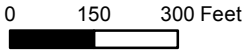
Beaver Campground
US Forest Service

Reconnect
floodplain

Wind River

Wind River Restoration Strategy

Wind River - Beaver Campground Project



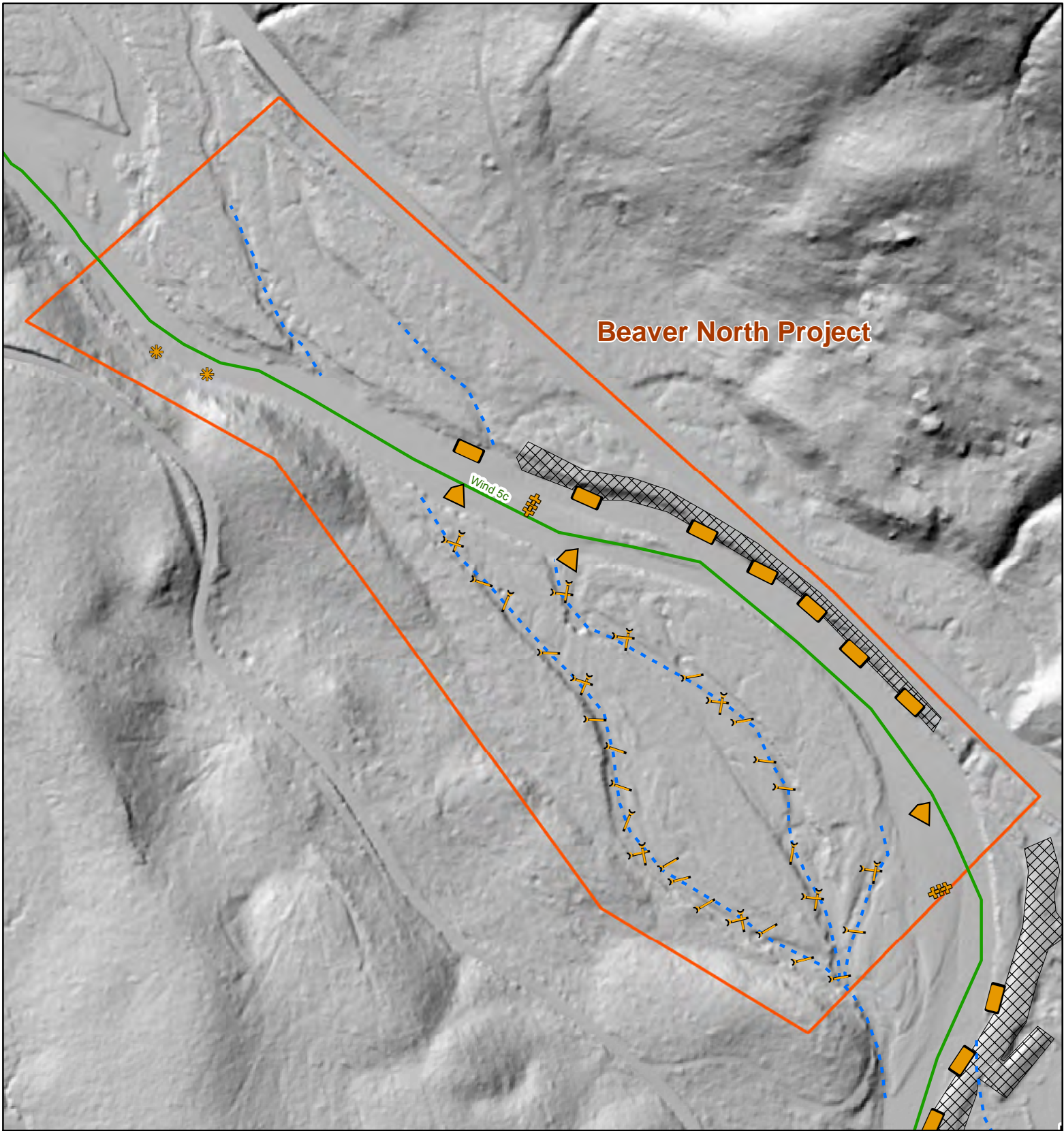
- EDT Reach
- Project Area

Project Elements

- Bar apex log jam
- Large wood capture structure
- Individual log placement
- Large wood margin complexity

- Channel margin log jam
- Channel Spanning Structure
- Whole tree placement

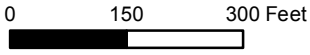
- - - Enhance side channel connectivity
- Removal/modification of fill or armoring
- Riparian revegetation



Beaver North Project

Wind 5c

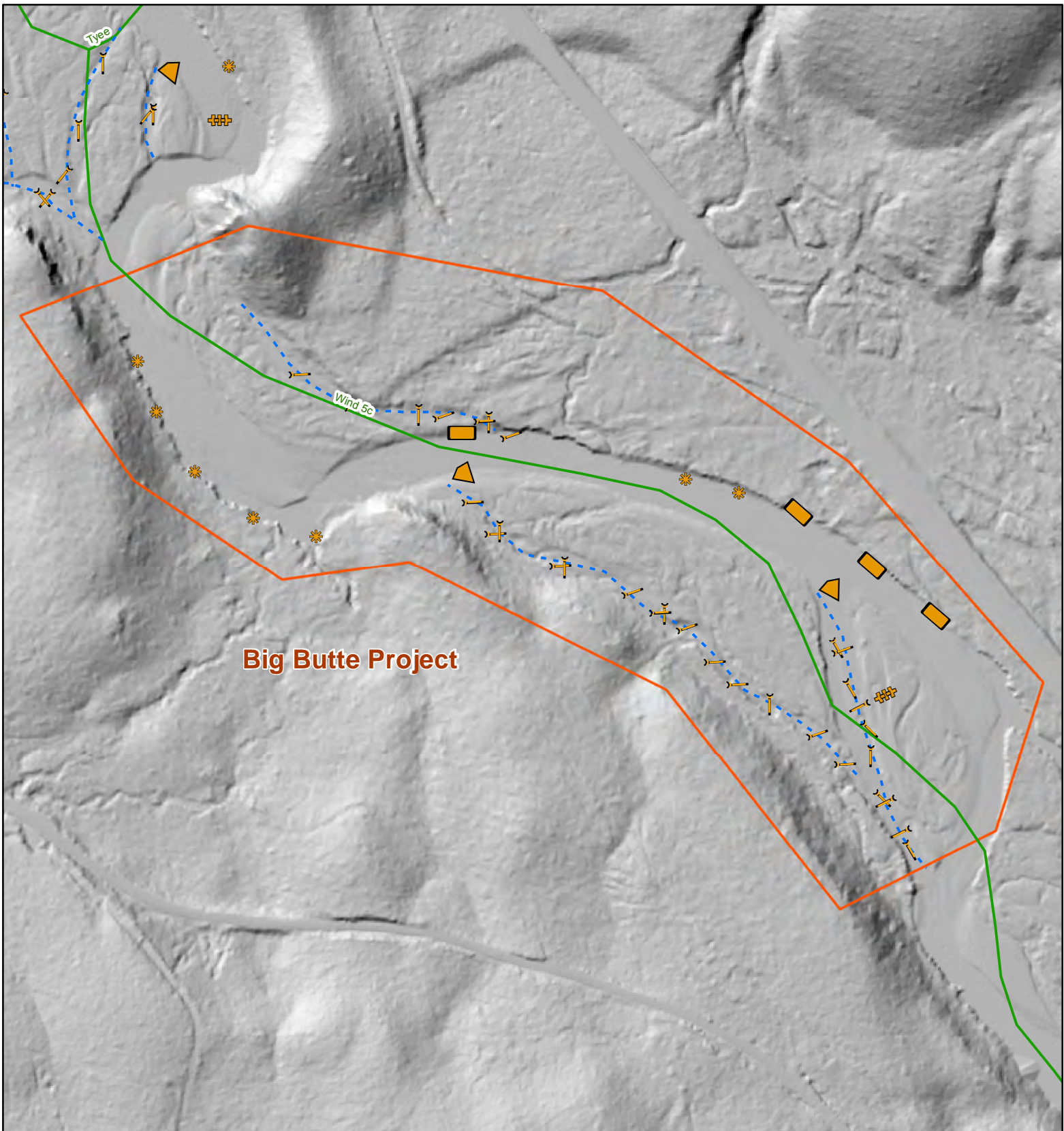
Wind River Restoration Strategy
Wind River - Beaver North Project



- EDT Reach
- Project Area

Project Elements

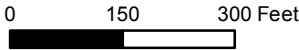
- Bar apex log jam
- Channel margin log jam
- Large wood capture structure
- Channel Spanning Structure
- Individual log placement
- Whole tree placement
- Large wood margin complexity
- - - Enhance side channel connectivity
- Removal/modification of fill or armoring
- Riparian revegetation



Big Butte Project

Wind River Restoration Strategy

Wind River - Big Butte Project



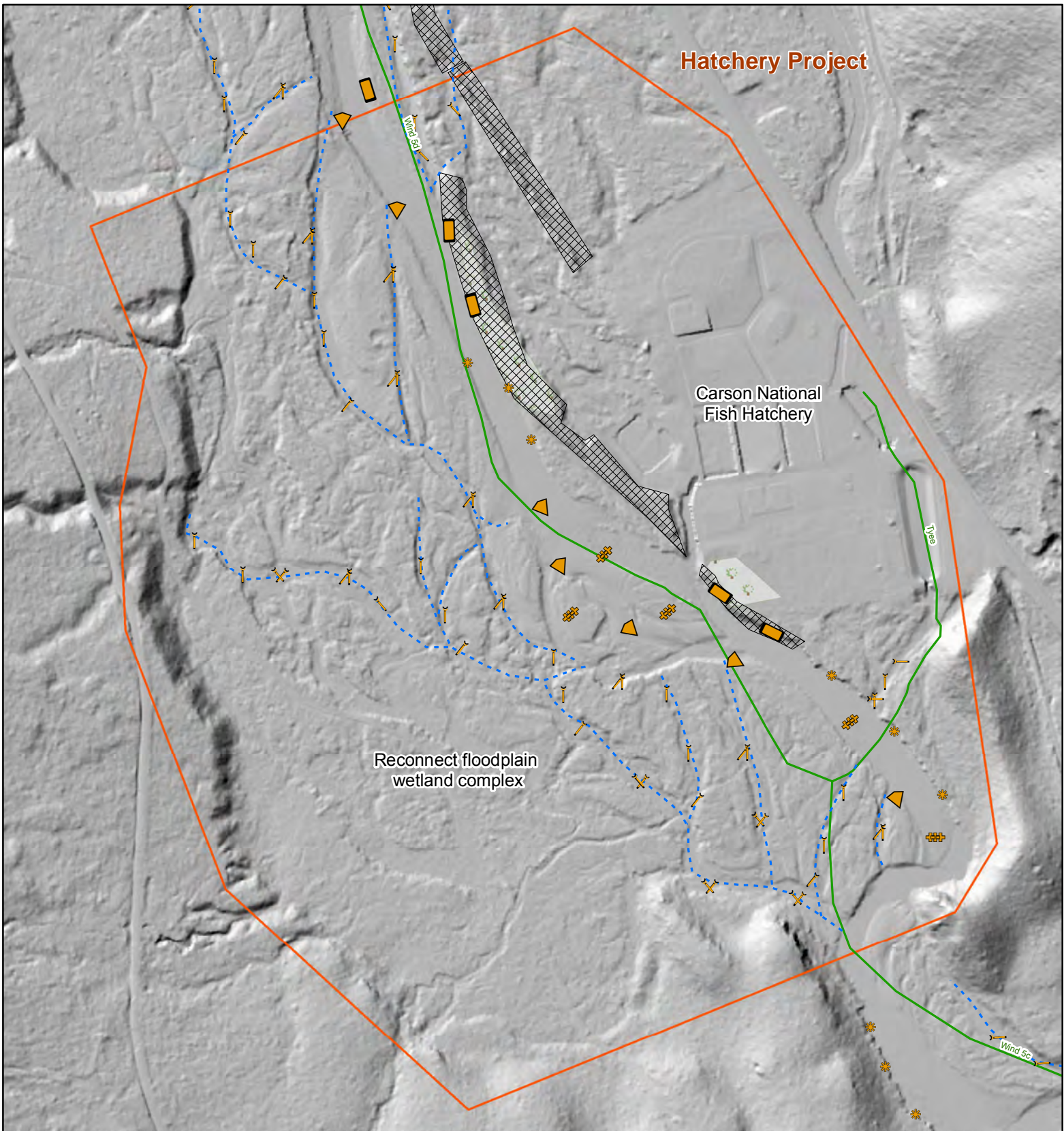
- EDT Reach
- Project Area

Project Elements

- ▲ Bar apex log jam
- ⊕ Large wood capture structure
- | Individual log placement
- ✱ Large wood margin complexity

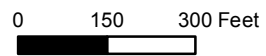
- ▭ Channel margin log jam
- ⌘ Channel Spanning Structure
- 🌲 Whole tree placement

- - - Enhance side channel connectivity
- Removal/modification of fill or armoring
- Riparian revegetation



Wind River Restoration Strategy

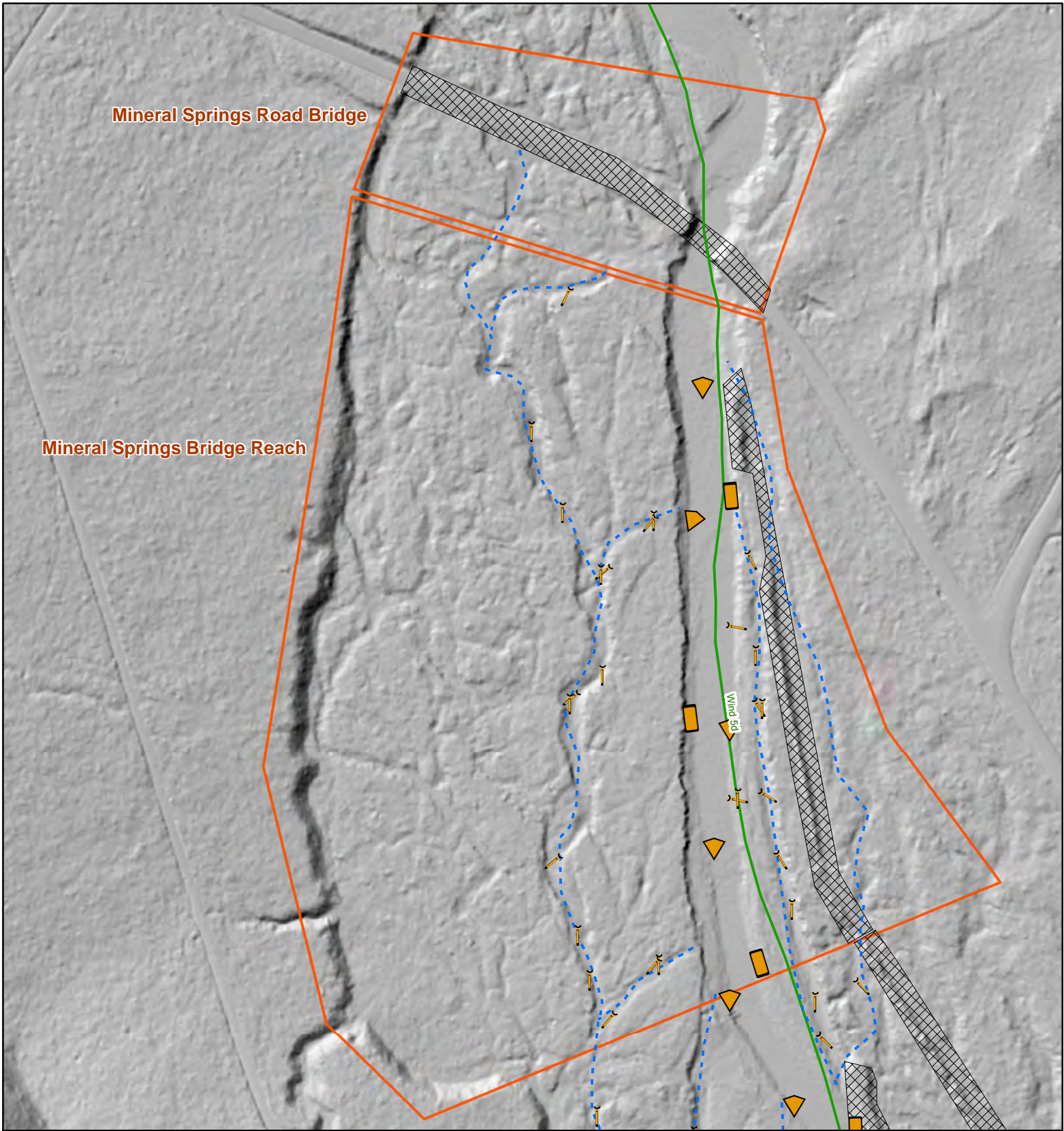
Wind River - Hatchery Project



- EDT Reach
- Project Area

Project Elements

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> Bar apex log jam Large wood capture structure Individual log placement Large wood margin complexity | <ul style="list-style-type: none"> Channel margin log jam Channel Spanning Structure Whole tree placement | <ul style="list-style-type: none"> - - - Enhance side channel connectivity Removal/modification of fill or armoring Riparian revegetation |
|--|---|--|



Wind River Restoration Strategy

Wind River - Mineral Springs Road Area Projects

0 150 300 Feet



- EDT Reach
- Project Area

Project Elements

- ▲ Bar apex log jam

- ⊞ Large wood capture structure

- | Individual log placement

- ✱ Large wood margin complexity

- ▭ Channel margin log jam

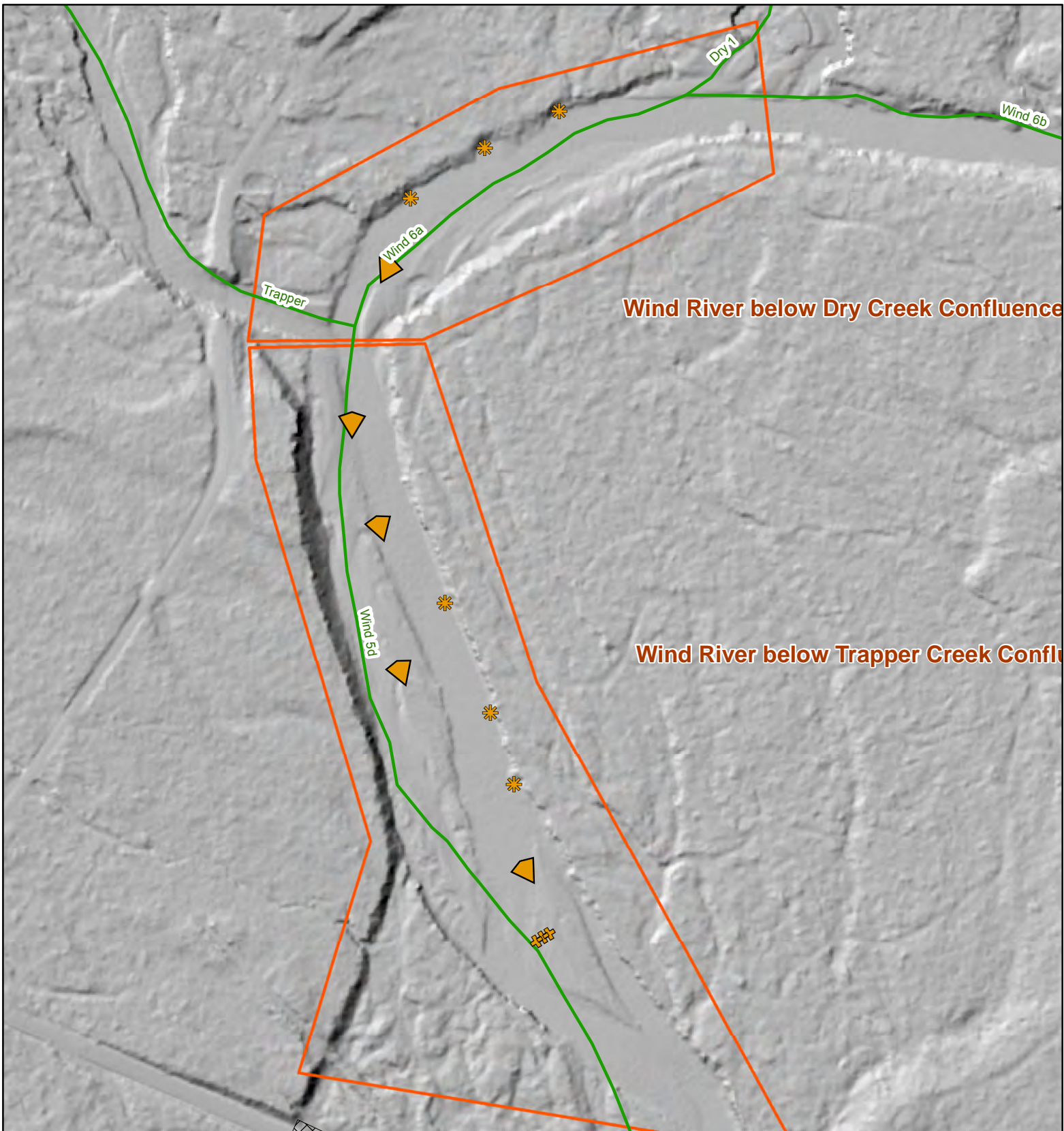
- ◇ Channel Spanning Structure

- ▲ Whole tree placement

- - - Enhance side channel connectivity

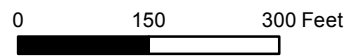
- Removal/modification of fill or armoring

- Riparian revegetation













Wind River Restoration Strategy

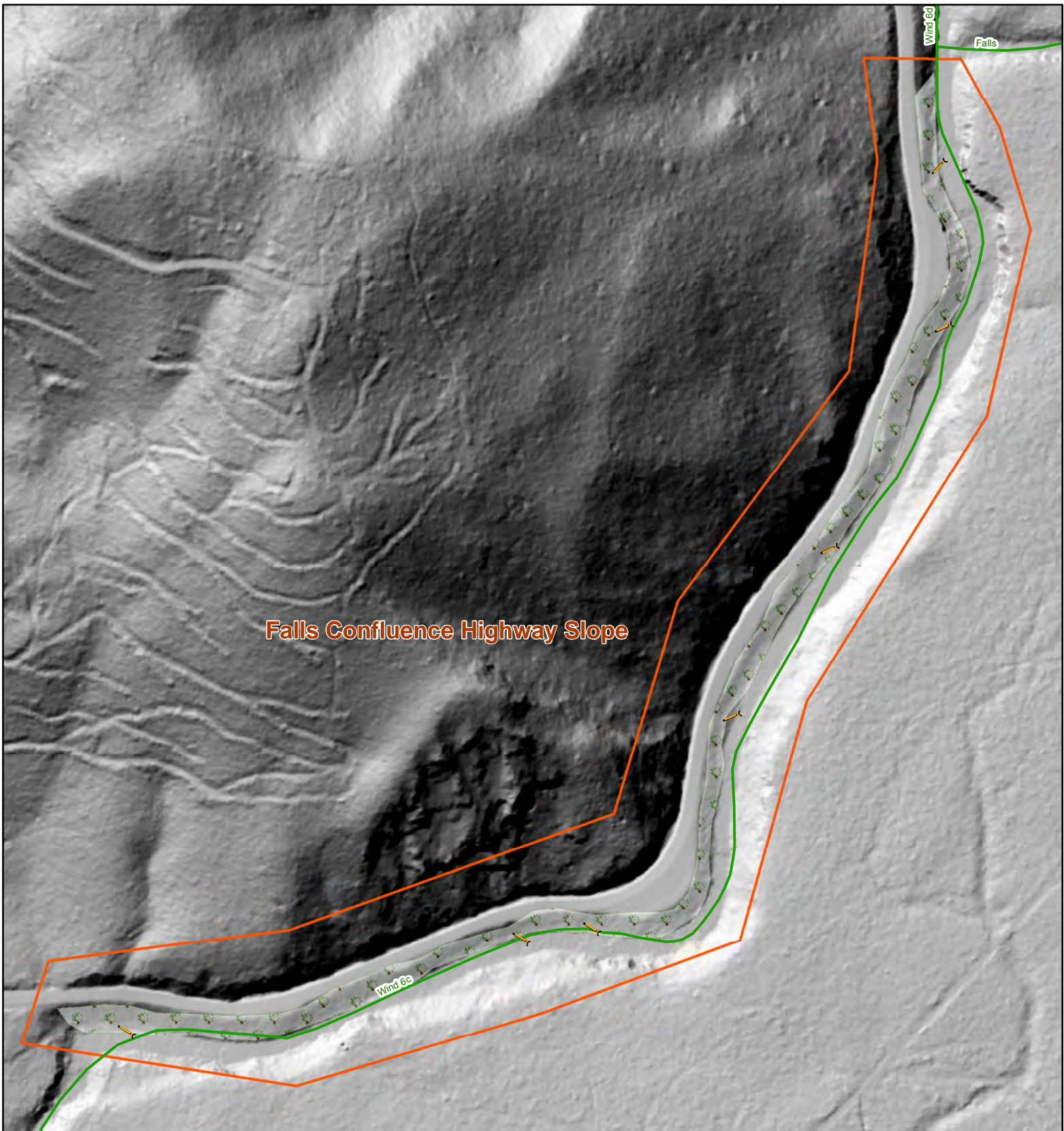
Wind River - Trapper-Dry Confluence Projects



- EDT Reach
- Project Area

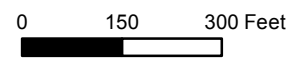
Project Elements

- | | | |
|--|--|--|
|  Bar apex log jam |  Channel margin log jam |  Enhance side channel connectivity |
|  Channel Spanning Structure |  Large wood capture structure |  Removal/modification of fill or armoring |
|  Large wood margin complexity |  Whole tree placement |  Riparian revegetation |
|  Individual log placement | | |



Wind River Restoration Strategy

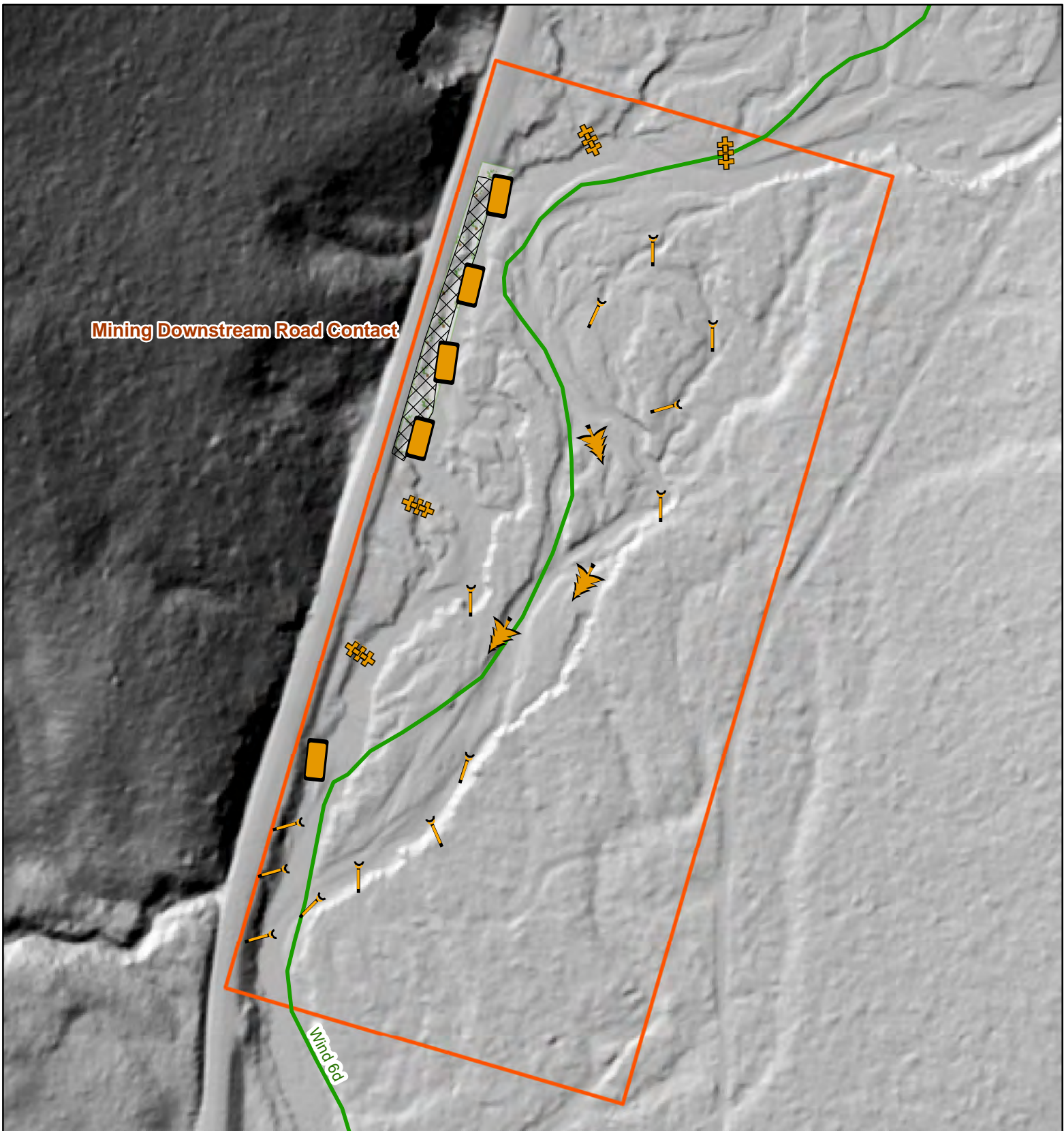
Wind River - Falls Confluence Highway Slope



- EDT Reach
- Project Area

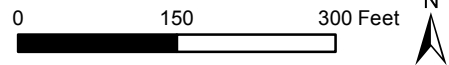
Project Elements

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> Bar apex log jam Large wood capture structure Individual log placement Large wood margin complexity | <ul style="list-style-type: none"> Channel margin log jam Channel Spanning Structure Whole tree placement | <ul style="list-style-type: none"> - - - Enhance side channel connectivity Removal/modification of fill or armoring Riparian revegetation |
|--|---|--|



Wind River Restoration Strategy

Wind River - Mining Reach Downstream Road Contact



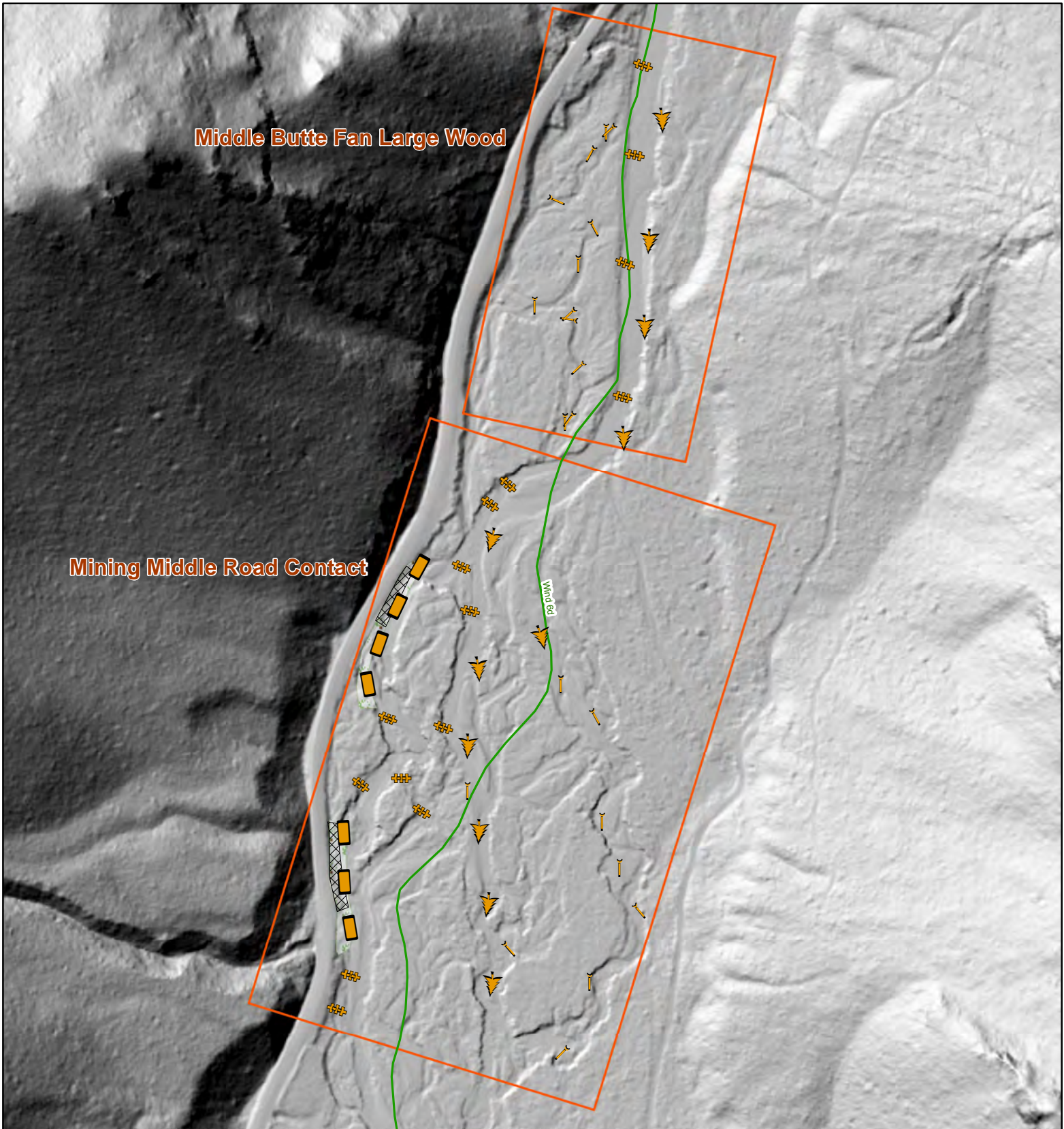
- EDT Reach
- Project Area

Project Elements

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> Bar apex log jam Large wood capture structure Individual log placement Large wood margin complexity | <ul style="list-style-type: none"> Channel margin log jam Channel Spanning Structure Whole tree placement | <ul style="list-style-type: none"> - - - Enhance side channel connectivity Removal/modification of fill or armoring Riparian revegetation |
|--|---|--|

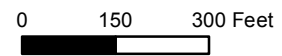
Middle Butte Fan Large Wood

Mining Middle Road Contact



Wind River Restoration Strategy

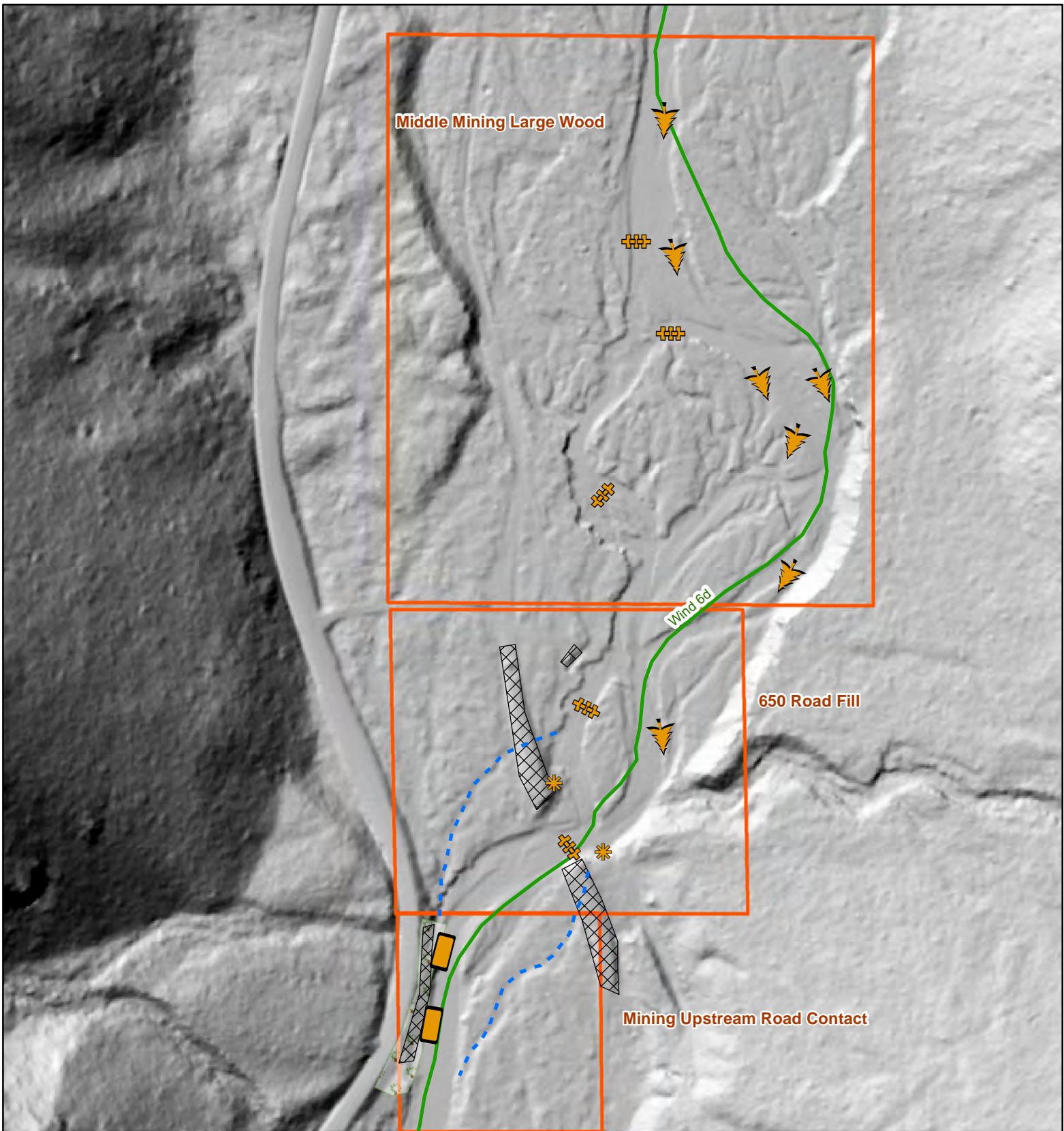
Wind River - Middle Mining Reach Projects



- EDT Reach
- Project Area

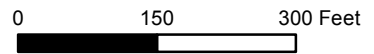
Project Elements

- Bar apex log jam
- Channel margin log jam
- Channel Spanning Structure
- Whole tree placement
- Enhance side channel connectivity
- Removal/modification of fill or armoring
- Riparian revegetation
- Large wood capture structure
- Individual log placement
- Large wood margin complexity



Wind River Restoration Strategy

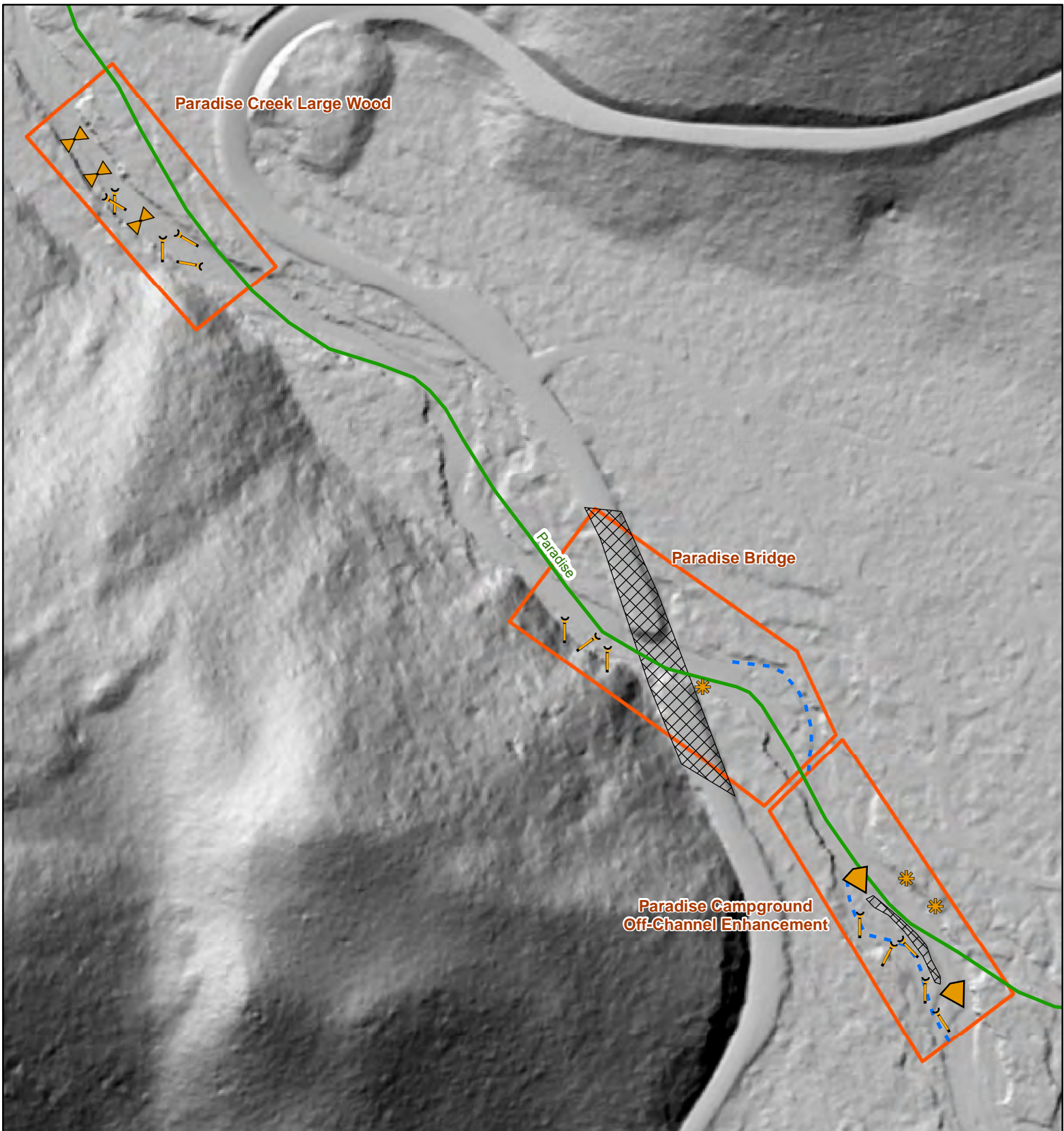
Wind River - Upper Mining Reach Projects



- EDT Reach
- Project Area

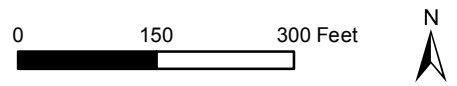
Project Elements

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> Bar apex log jam Large wood capture structure Individual log placement Large wood margin complexity | <ul style="list-style-type: none"> Channel margin log jam Channel Spanning Structure Whole tree placement | <ul style="list-style-type: none"> - - - Enhance side channel connectivity Removal/modification of fill or armoring Riparian revegetation |
|--|---|--|



Wind River Restoration Strategy

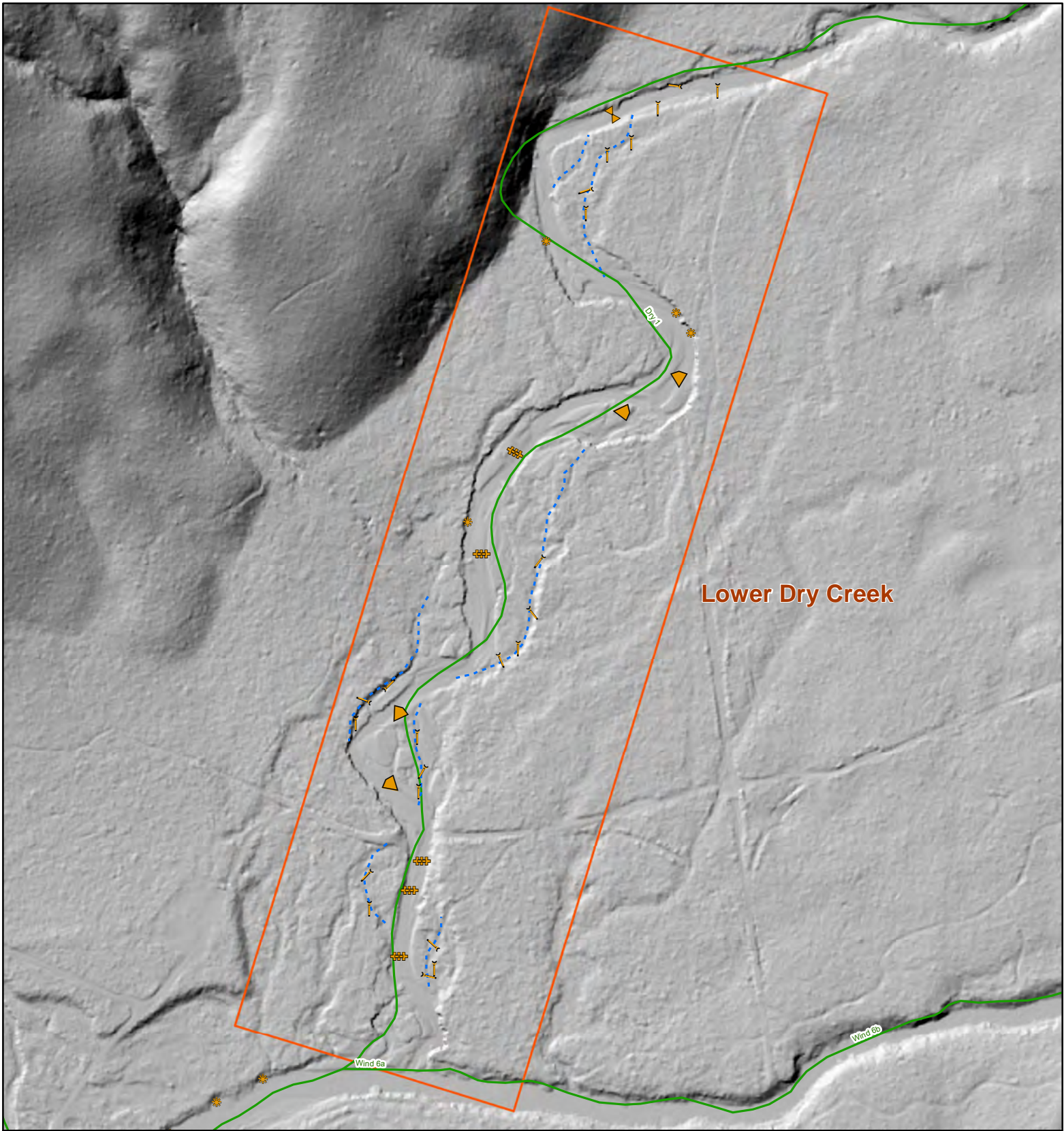
Paradise Projects



- EDT Reach
- Project Area

Project Elements

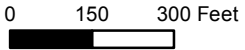
- | | | |
|--|---|--|
| <ul style="list-style-type: none"> Bar apex log jam Large wood capture structure Individual log placement Large wood margin complexity | <ul style="list-style-type: none"> Channel margin log jam Channel Spanning Structure Whole tree placement | <ul style="list-style-type: none"> - - - Enhance side channel connectivity Removal/modification of fill or armoring Riparian revegetation |
|--|---|--|



Lower Dry Creek

Wind River Restoration Strategy

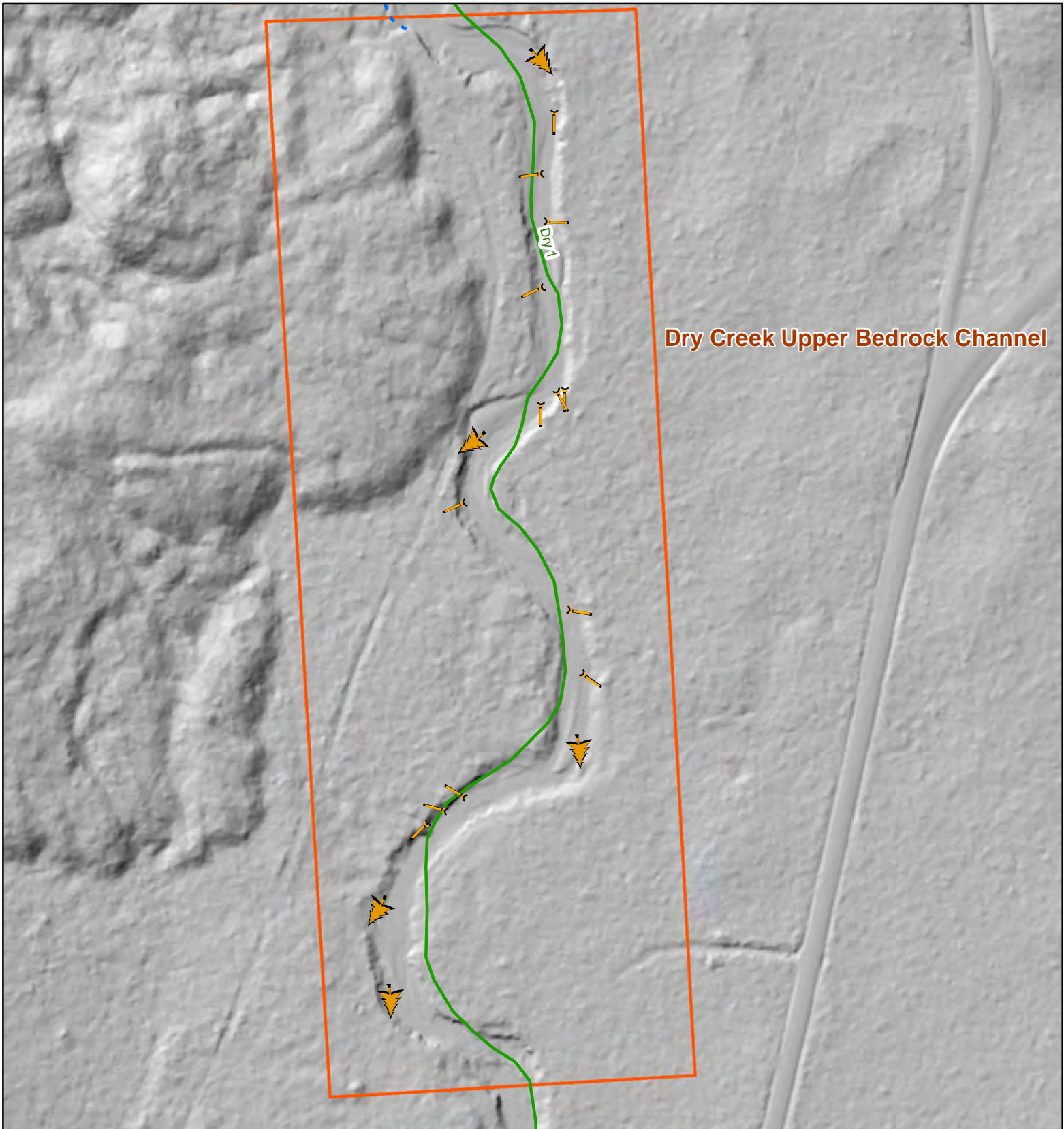
Lower Dry Creek



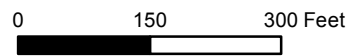
- EDT Reach
- Project Area

Project Elements

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> Bar apex log jam Large wood capture structure Individual log placement Large wood margin complexity | <ul style="list-style-type: none"> Channel margin log jam Channel Spanning Structure Whole tree placement | <ul style="list-style-type: none"> - - - Enhance side channel connectivity Removal/modification of fill or armoring Riparian revegetation |
|--|---|--|



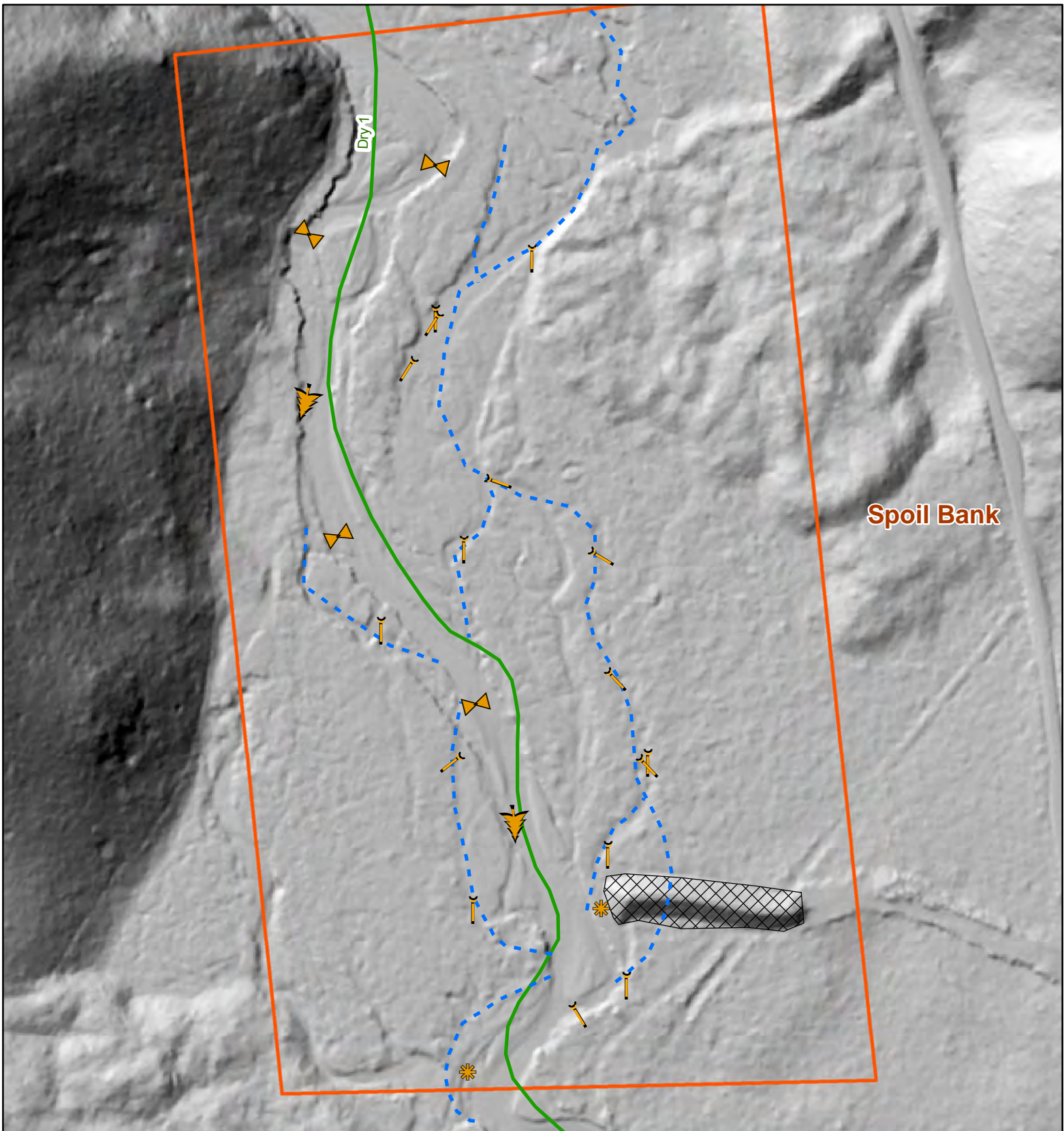
Wind River Restoration Strategy
Dry Creek - Upper Bedrock Channel



- EDT Reach
- Project Area

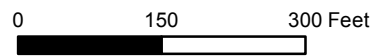
Project Elements

- | | |
|---|---|
| <ul style="list-style-type: none"> Bar apex log jam Channel margin log jam Channel Spanning Structure Whole tree placement Enhance side channel connectivity Removal/modification of fill or armoring Riparian revegetation | <ul style="list-style-type: none"> Large wood capture structure Individual log placement Large wood margin complexity |
|---|---|













Wind River Restoration Strategy

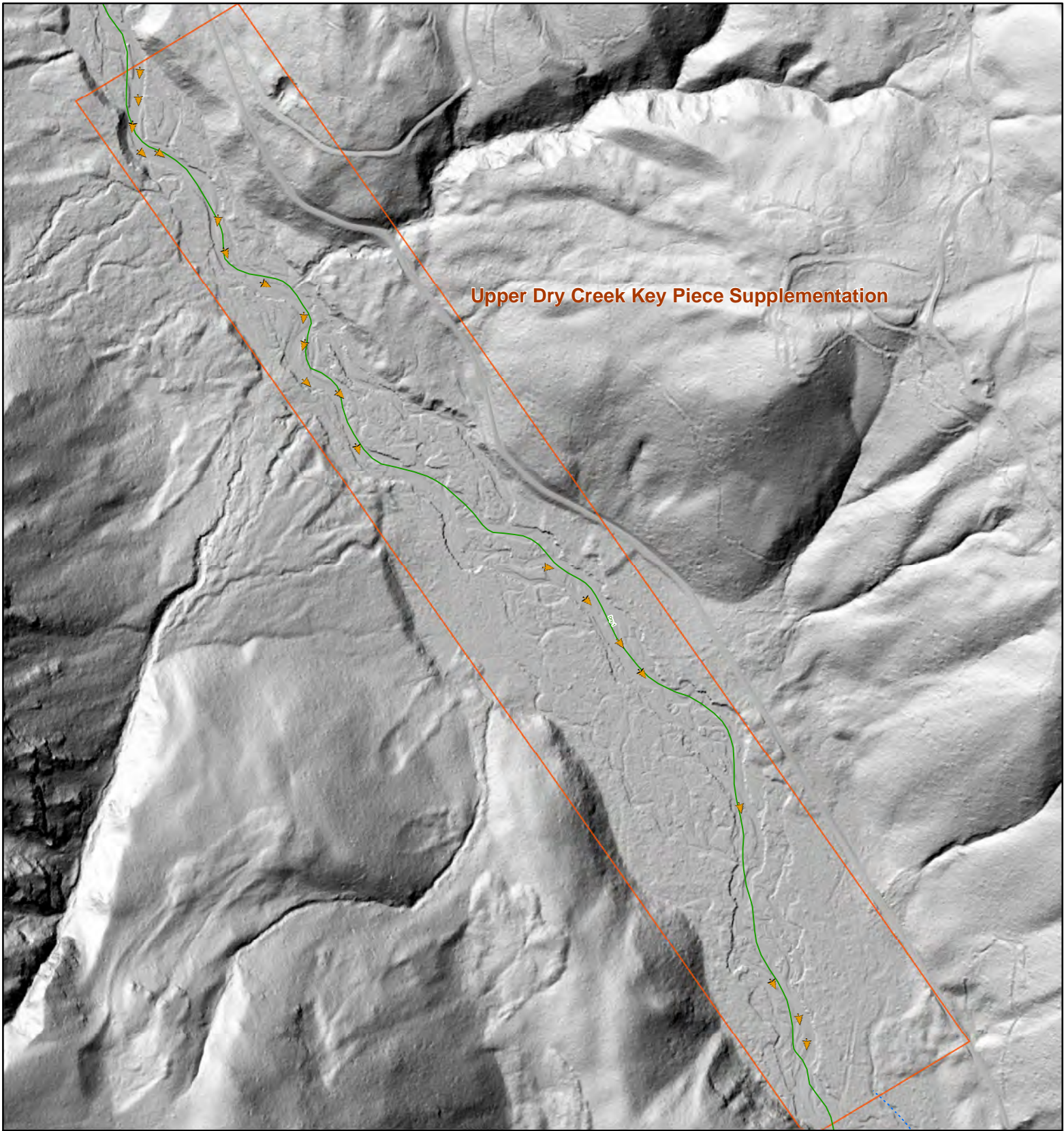
Dry Creek - Spoil Bank



- EDT Reach
- Project Area

Project Elements

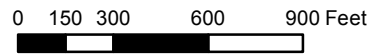
- | | | |
|--|--|--|
|  Bar apex log jam |  Channel margin log jam |  Enhance side channel connectivity |
|  Large wood capture structure |  Channel Spanning Structure |  Removal/modification of fill or armoring |
|  Individual log placement |  Whole tree placement |  Riparian revegetation |
|  Large wood margin complexity | | |



Upper Dry Creek Key Piece Supplementation










Wind River Restoration Strategy

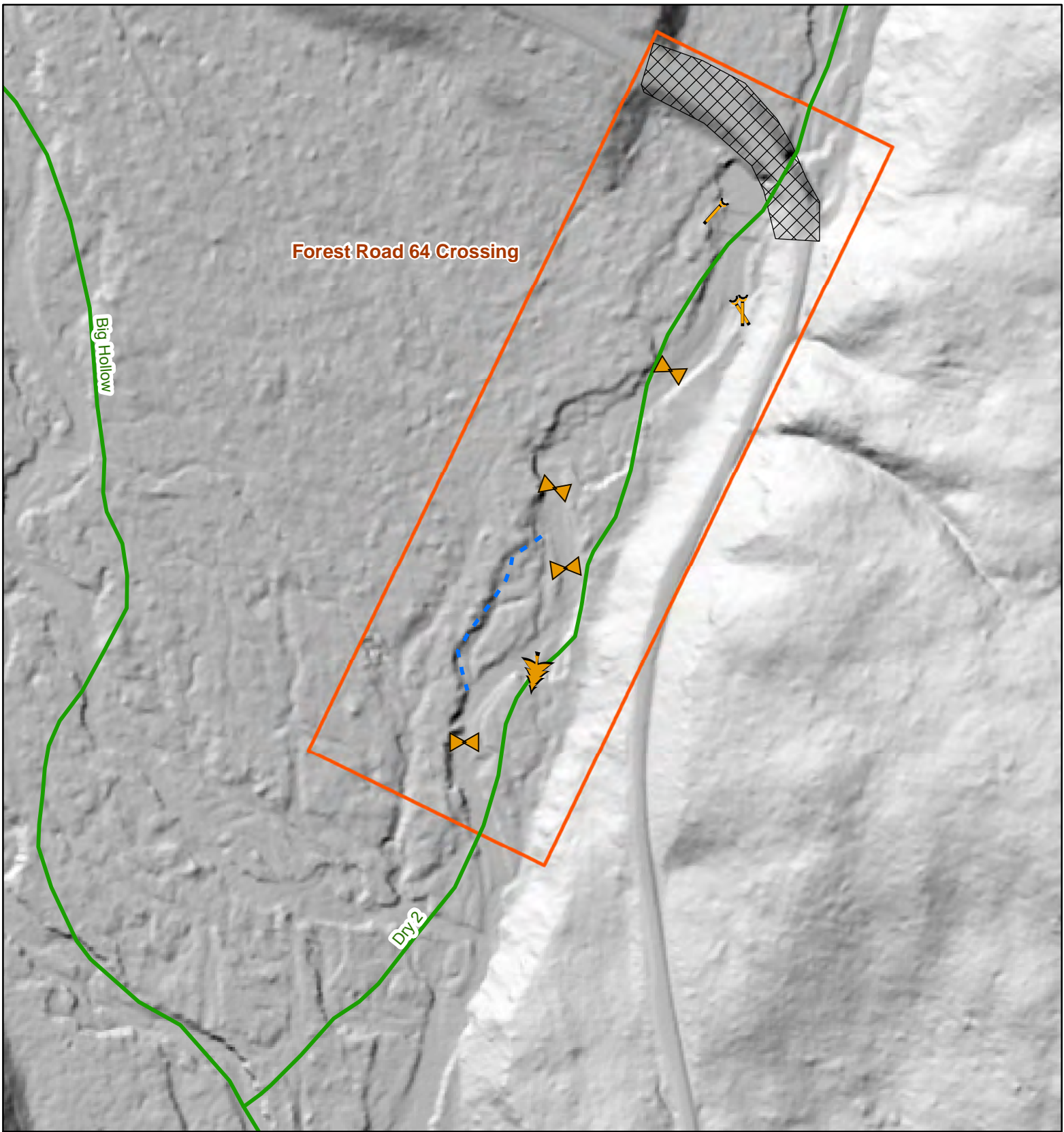
Dry Creek - Key Piece Supplementation Project



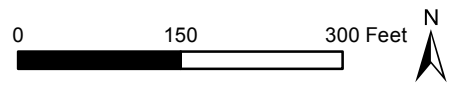
- EDT Reach
- Project Area

Project Elements

- | | | |
|--|--|--|
| <ul style="list-style-type: none">  Bar apex log jam  Large wood capture structure  Individual log placement  Large wood margin complexity | <ul style="list-style-type: none">  Channel margin log jam  Channel Spanning Structure  Whole tree placement | <ul style="list-style-type: none"> - - - Enhance side channel connectivity  Removal/modification of fill or armoring  Riparian revegetation |
|--|--|--|












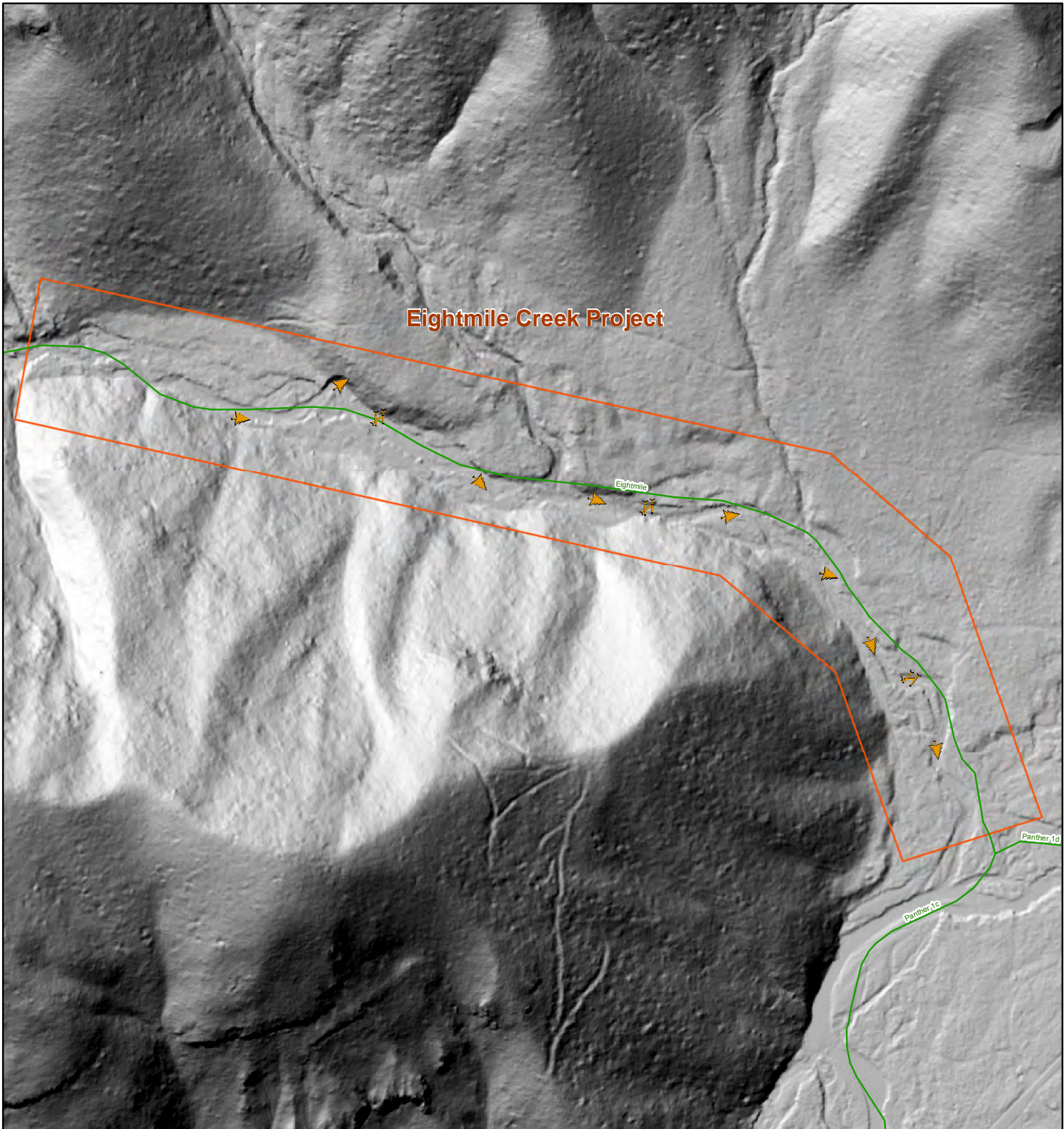
Wind River Restoration Strategy
Dry Creek - Forest Road 64 Crossing



- EDT Reach
- Project Area

Project Elements

- | | | |
|--|--|--|
| <ul style="list-style-type: none">  Bar apex log jam  Large wood capture structure  Individual log placement  Large wood margin complexity | <ul style="list-style-type: none">  Channel margin log jam  Channel Spanning Structure  Whole tree placement | <ul style="list-style-type: none"> - - - Enhance side channel connectivity  Removal/modification of fill or armoring  Riparian revegetation |
|--|--|--|













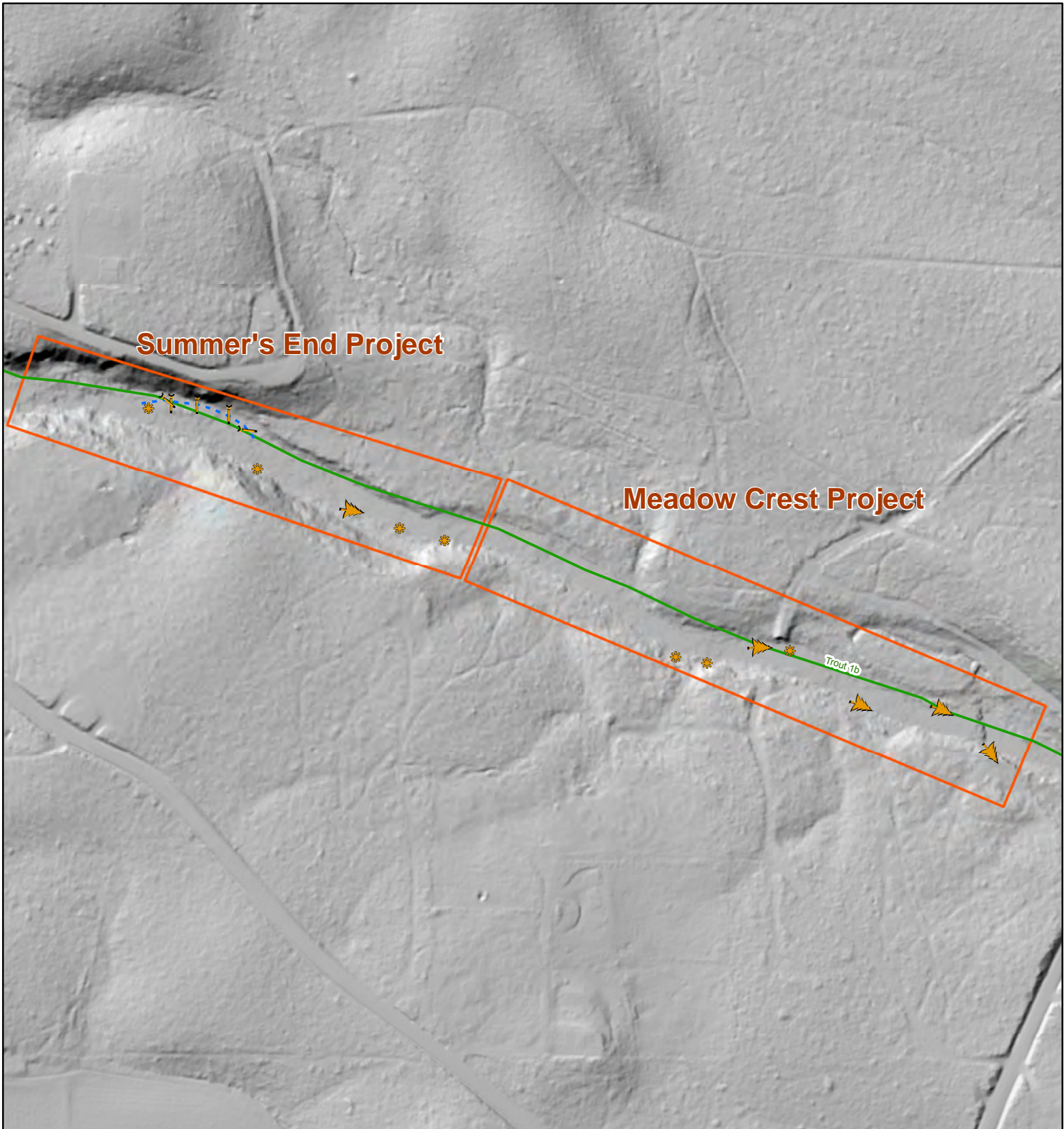
Wind River Restoration Strategy
Eightmile Creek Project



- EDT Reach
- Project Area

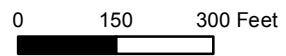
Project Elements

- | | | |
|--|--|--|
| <ul style="list-style-type: none">  Bar apex log jam  Large wood capture structure  Individual log placement  Large wood margin complexity | <ul style="list-style-type: none">  Channel margin log jam  Channel Spanning Structure  Whole tree placement | <ul style="list-style-type: none">  Enhance side channel connectivity  Removal/modification of fill or armoring  Riparian revegetation |
|--|--|--|



Wind River Restoration Strategy

Lower Trout Creek Projects



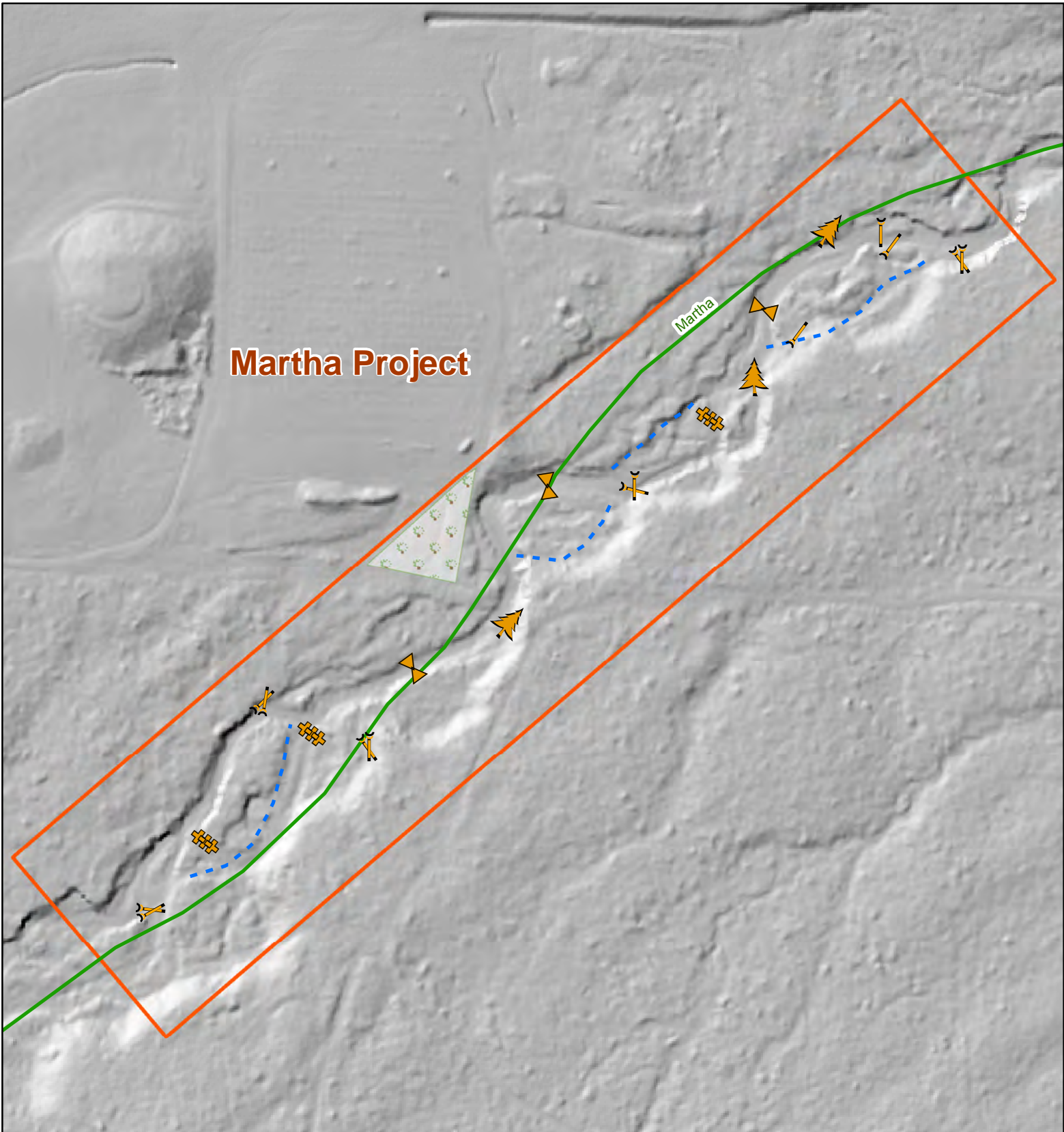
- EDT Reach
- Project Area

Project Elements

- Bar apex log jam
- Large wood capture structure
- Individual log placement
- Large wood margin complexity

- Channel margin log jam
- Channel Spanning Structure
- Whole tree placement

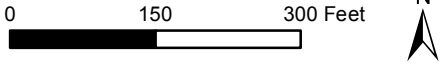
- - - Enhance side channel connectivity
- Removal/modification of fill or armoring
- Riparian revegetation



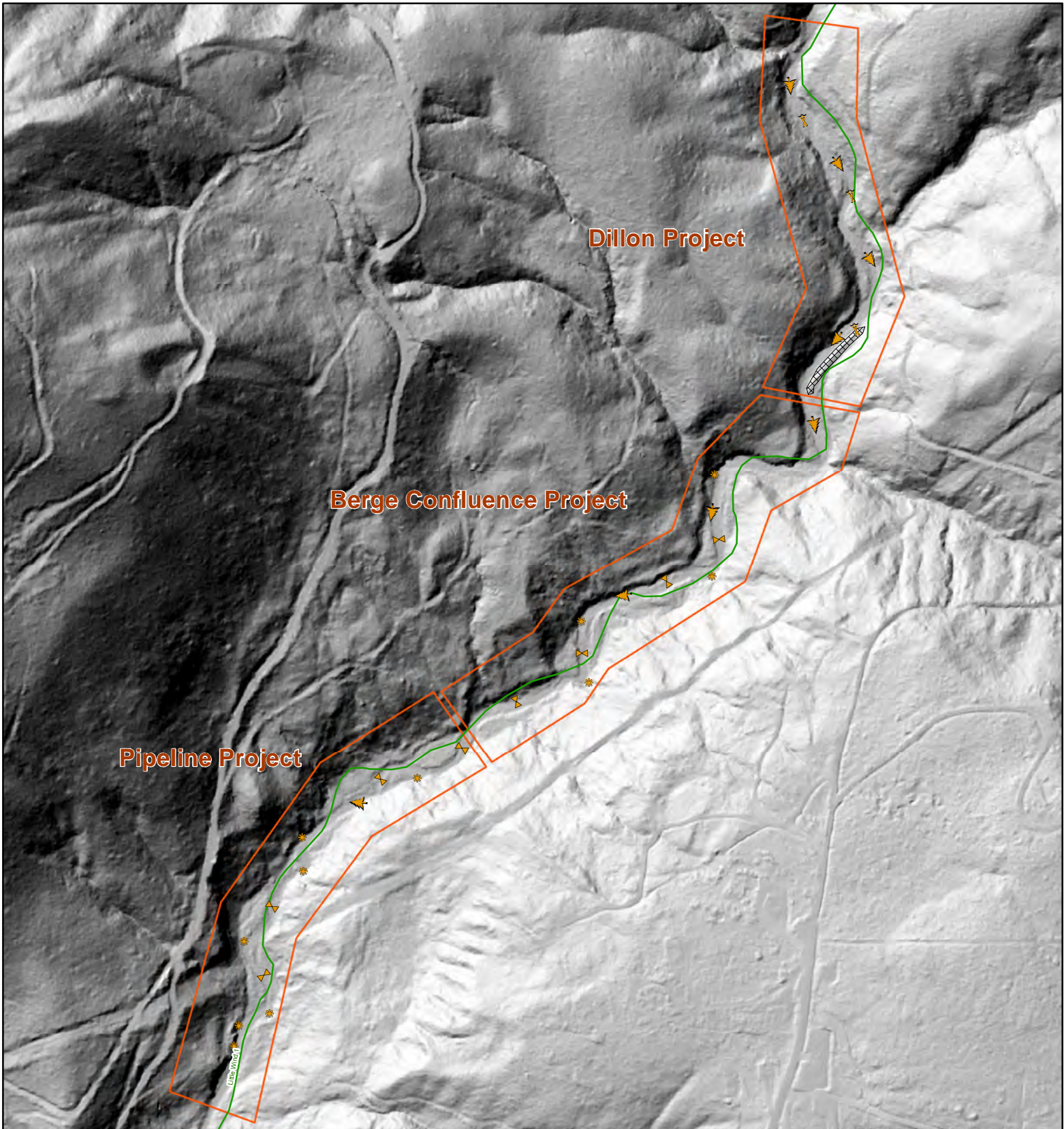
Martha Project

Wind River Restoration Strategy

Martha Creek Project

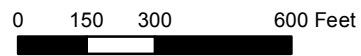


- | | | | |
|--------------|------------------------------|----------------------------|--|
| EDT Reach | Project Elements | Channel margin log jam | Enhance side channel connectivity |
| Project Area | Bar apex log jam | Channel Spanning Structure | Removal/modification of fill or armoring |
| | Large wood capture structure | Whole tree placement | Riparian revegetation |
| | Individual log placement | | |
| | Large wood margin complexity | | |



Wind River Restoration Strategy

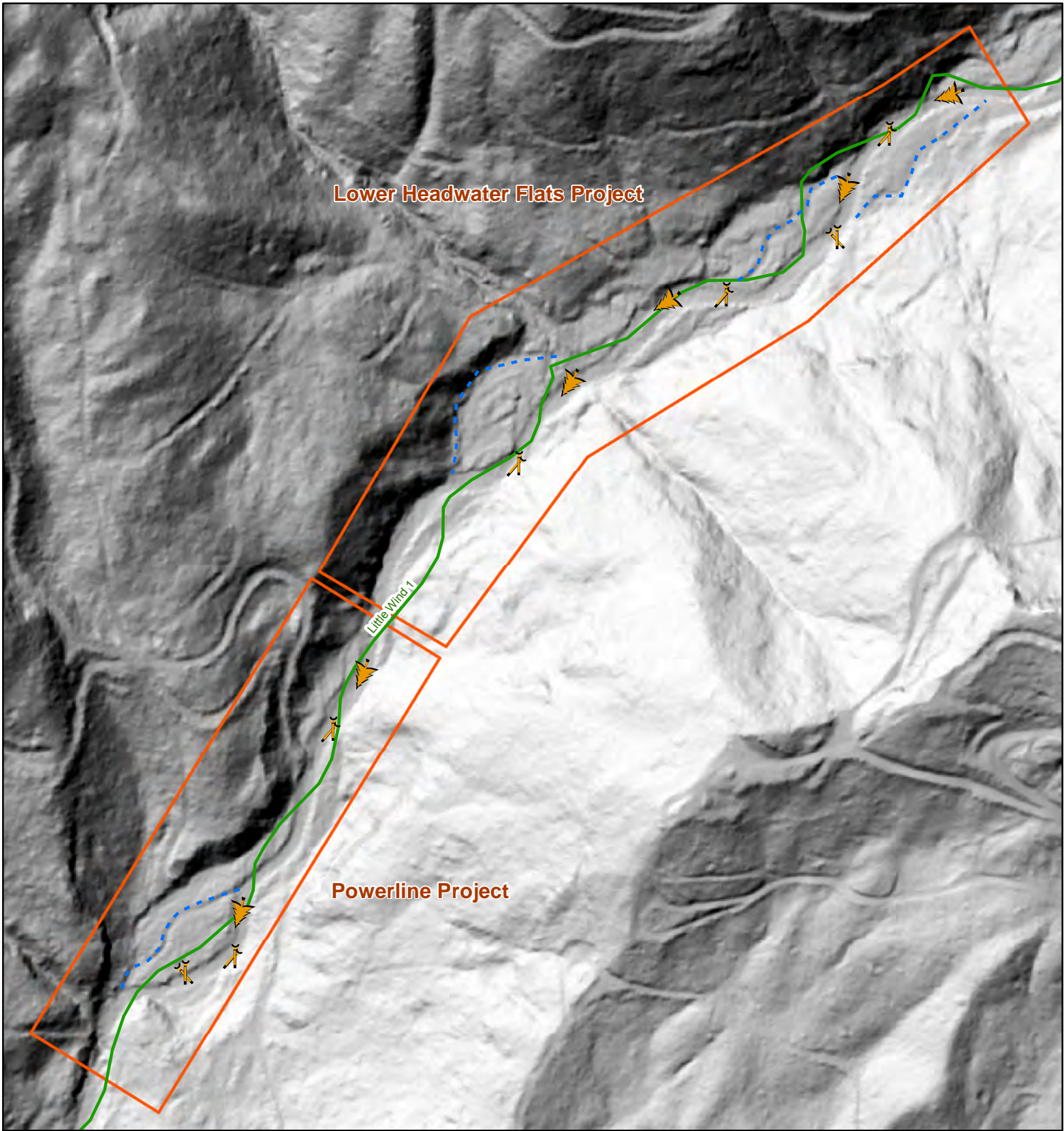
Little Wind River - Downstream Projects



- EDT Reach
- Project Area

Project Elements

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> Bar apex log jam Large wood capture structure Individual log placement Large wood margin complexity | <ul style="list-style-type: none"> Channel margin log jam Channel Spanning Structure Whole tree placement | <ul style="list-style-type: none"> - - - Enhance side channel connectivity Removal/modification of fill or armoring Riparian revegetation |
|--|---|--|



Wind River Restoration Strategy

Little Wind River - Upstream Projects (Lower)

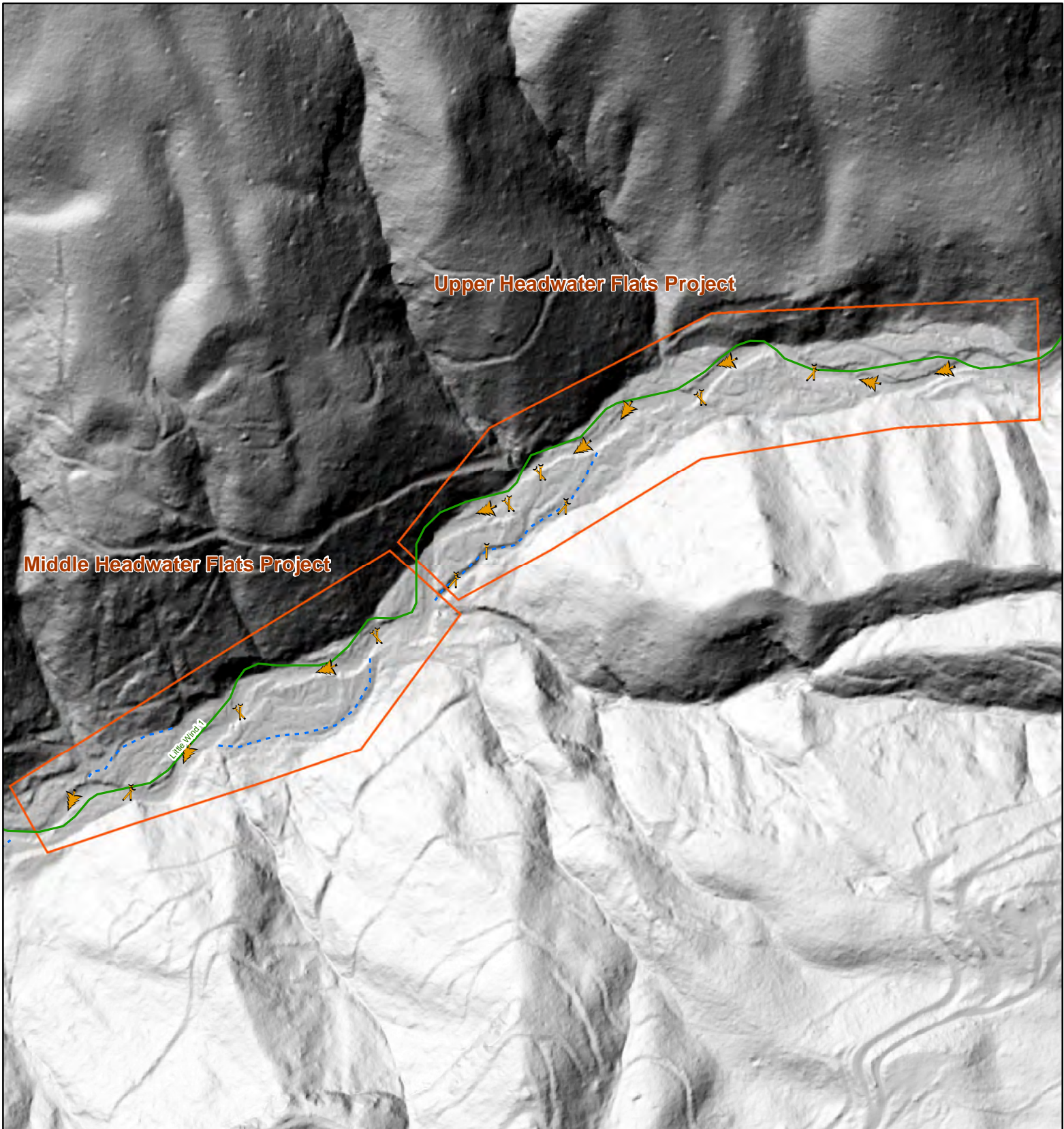
0 150 300 Feet



- EDT Reach
- Project Area

Project Elements

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> Bar apex log jam Large wood capture structure Individual log placement Large wood margin complexity | <ul style="list-style-type: none"> Channel margin log jam Channel Spanning Structure Whole tree placement | <ul style="list-style-type: none"> - - - Enhance side channel connectivity Removal/modification of fill or armoring Riparian revegetation |
|--|---|--|



Wind River Restoration Strategy











Little Wind River - Upstream Projects (Upper)

0 150 300 Feet



- EDT Reach
- Project Area

Project Elements

- | | | |
|--|--|--|
|  Bar apex log jam |  Channel margin log jam |  Enhance side channel connectivity |
|  Large wood capture structure |  Channel Spanning Structure |  Removal/modification of fill or armoring |
|  Individual log placement |  Whole tree placement |  Riparian revegetation |
|  Large wood margin complexity | | |