

**Forsythe II Multiparty Monitoring Group (MMG)**  
**USFS Response to MMG Input on Units – Avenza Points and Discussion Items**  
**July 2018**

The information in this table is a summary of the Avenza points and comments brought forward by the MMG to the US Forest Service in regard to Phases 1 and 2 for the Forsythe II Project. The points that were brought forward by the MMG were very helpful in identifying areas of concern along with points of interest (i.e. springs) that the Forest Service's GIS and other databases did not have identified. All feedback was considered; however, in order to maintain the integrity of the purpose and need and to achieve the objectives for the Forsythe II Project, some of the feedback was not incorporated into the layout of the units to be implemented in Phases 1 and 2. Minor changes are still being made to the boundaries of units and aggregations, but the majority of the boundary establishment has been completed.

Through the process of layout, some significant changes were made to Phases 1 and 2. For example, almost 40% less acres will be treated from what was planned in the final decision. A substantial shift from treating acres mechanically to treating acres manually will also occur, which will result in less basal area being removed in all treatment types. The outcome of these two changes is a significant reduction in the number of trees that will be cut.

**Commonly Used Acronyms:** DN – Decision Notice; DBH – Diameter at Breast Height (4.5' above ground on the uphill side); BA – Basal Area; PP – ponderosa pine; DF – Douglas-fir; LPP – lodgepole pine; LM – limber pine; AS – Aspen; ES – Engelmann spruce; BS – blue spruce; RMJ – Rocky Mountain juniper

**Links Associated to Documents Cited:**

Forsythe II Project Decision Notice: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd549685.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd549685.pdf)

1997 Revision of the Land and Resource Management Plan; Arapaho and Roosevelt National Forests and Pawnee National Grassland Final Environmental Impact Statement FEIC Appendices Appendix B: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fsm91\\_058054.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsm91_058054.pdf)

Terrestrial Wildlife Specialist Report: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd525367.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd525367.pdf)

Botanist Findings: <https://cfri.colostate.edu/wp-content/uploads/sites/22/2018/07/orchids-botany.pdf>

Hydrologist and Soils Findings: <https://cfri.colostate.edu/wp-content/uploads/sites/22/2018/07/unit1-hydro-soils.pdf>

Wildlife Findings: <https://cfri.colostate.edu/wp-content/uploads/sites/22/2018/07/fnwildlife26june18.pdf>

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<b>PHASE 1: Units 5, 7, 8 – Aspen Restoration Treatment Units</b>		
Historic meadow present		Meadows, whether they are identified as a treatment type or as an aggregation within another treatment type, will be treated as described in the Final Decision (DN pp 4, 7): Cut all ponderosa pine and Douglas-fir up to 14 inches DBH and all lodgepole pine up to 12 inches DBH; retain all limber line; treatment will be done manually.
Tree species of concern present (Spruce & Limber pine)		Spruce are generally found in wetter areas (i.e. riparian areas) and are of size that exceed the diameter cap for this project, and therefore will not be cut. In aspen clones, spruce below the diameter cap will be cut. Limber pine that do not pose a safety hazard will be retained.
Signs of wildlife (moose/elk)		The entire project area, including Units 5, 7, and 8, are used in one way or another by elk through migration, refuge, or as seasonal range. The landscape is dynamic and as the components of the environment change either in a natural (i.e. wildfire or insect epidemic) or in human caused (building a house or patch cut) disturbances, species of wildlife will adapt their patterns best suited for their needs. Some species, which are well adapted for exploiting disturbance sites, will visit these early succession stage habitats. Pioneer species will take advantage of an open canopy and the lack of competition. Herbivores will increase their use possibly altering plant growth. Burrowing mammals could stimulate plant community development. Pollinators will increase as forbs become more abundant. Young forests will lead these disturbance sites back to their

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		<p>previous condition, and so will the species associated with each step in the cycle.</p> <p>In addition to the Avenza points that the group has provided, visual sightings and evidence of elk use have been observed throughout the project and adjacent areas (Terrestrial Wildlife Specialist Report, pp. 64-67).</p> <p>Much like elk, moose live in forested areas, but prefer sub-alpine shrublands where they forage on fresh shoots from willow and the bark of aspen. They are typically attracted to wetlands, like the large one in unit 5, where the MMG group located sign and noted such in Avenza. The aspen regeneration for this unit should benefit moose habitat.</p>
Evidence of recreation (skeet)	There is a popular trail in this area, and the lodgepole pine along the trail act as a snow fence. Without the dense tree coverage, people may not use the trail in the same way.	This trail/road is part of the Forest Road System and is identified as FSR606.1. The Forsythe II Project identified this trail/road to access units 5, 7, and 8 in addition to other units. Once the units utilizing this road system have all been treated, the road would be returned to a single track and incorporated into the trail system as part of the Magnolia Trails Project.
Large or old growth trees in units		Aspen treatment units and aggregations have diameter cap limits of 14" DBH for PP and DF and 12" DBH for LPP (DN, pp. 4, 5-7). A minimum of 5 of the largest available dead trees will be retained (PP/DF- min. 10" DBH, LPP- min. 8" DBH); preference will be given to ponderosa pine snags. If the minimum number of snags is not available, then the largest available live, green replacement trees will be retained for future snags (DN, pp 6, 33).

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Perennial stream present		Mechanical logging equipment will not operate within 100' of the edge of the perennial stream (DN, p. 35). Manual treatment can occur within the 100' buffer up to the edge of the stream bank, but woody riparian vegetation will not be cut (DN, p. 36). Hand piles will be located at least 50' from the stream and slash cut up to the bank will have to be carried outside of the 50' buffer before it can be piled (DN, p. 38).
Wetlands	<ul style="list-style-type: none"> <li>• Unit 5 has a large wetland area.</li> <li>• The USFS plans to avoid treatment in areas that are wet and where there are water sources.</li> </ul>	Design Criteria are in place to address riparian or wetland areas. The unit will be treated manually and the respective Design Criteria will be applied (DN, pp. 35, 36, 38).
Roads and Trails	The road will be rerouted to access northwest treatment units. There is an interest in ensuring that the future alignment of this road tracks as much as possible with the alignment of recreation trails to minimize disturbance. Realignment may cause the proliferation of social trails	The FSR 606.1 road will not be reconstructed to access units 5, 7, and 8 because the units will be treated manually. For Phases 3 and 4, the FSR606.1 road system will be reconstructed to access the units north and east of units 5, 7, and 8 in the Fall of 2019. Once the cutting and hauling are completed, the road will be returned to a single-track trail condition. Where system trails have been impacted through the vegetation activities, they will be returned to a single-track condition. Non-system trails will not be returned to their previous condition. The Magnolia Trails Project will evaluate the existing system trails in the vicinity and determine the most sustainable location for the trail system upon completion of the fuels mitigation in the area.
Aesthetics	<ul style="list-style-type: none"> <li>• Leaving clumps of large trees is aesthetically pleasing.</li> <li>• There is lots of visible heterogeneity within Unit 7, and many of the big trees</li> </ul>	Across the landscape there are many aspen clones (probably over 90%) that are mixed with conifer especially those that have been absent from fire over the decades. Pure aspen clones have been shrinking in size due to conifer encroachment and have an overall

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	will be left due to Design Criteria relating to circumference.	impact to certain wildlife species that depend on pure aspen clones for habitat. In areas that are treatable whether mechanically or manually, the Decision allows for the cutting of conifers up to the diameter caps described (DN, pp. 4, 6). Clumps of large conifers will be retained in aspen above the diameter caps and in other treatment units.
<b>Unit 40 -- Douglas-fir Mixed Conifer</b>		
Evidence of wildlife trail		Corridors and refuge are dynamic across the landscape and as the components of the environment change either in a natural (i.e. wildfire or insect epidemic) or in a human caused (building a house or patch cut) disturbance, species of wildlife will adapt their patterns best suited for their needs. As they adjust to those changing conditions, finding the path of least resistance by cutting across an open field or through a dense forest will eventually turn to new trail.
Evidence of recreation (campsites/rock fire pits)		Thank you for identifying these campsites and fire pits. In this area (Forsythe Trailhead east along the FSR 359.1 road system) camping is only allowed in designated dispersed campsites. However, some sites and rock fire pits are created outside of the designated sites and are reclaimed as time and work capacity allows.
Large or old growth trees in units	There seem to be patches of old growth. However, it is unclear if there is an old growth ecosystem or rather mature trees. Mature trees and old growth forests are not the same thing.  Since this unit will be treated manually in Phase 1, the diameter cap and operational	Diameter caps (14" DBH) for all conifers are in place for mixed conifer stand treatment units. Old growth is a forest condition that exhibits ecological features including, but not limited to large trees (Final Environmental Impact Statement, FEIC Appendices, Appendix B, pp. 11, 12).

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	logistics are not conducive to the removal of large-diameter trees.	
Concern for wildlife habitat		Unsure what species the concern for wildlife habitat is in reference to? The landscape is dynamic and as the components of the environment change either in a natural or in a human caused disturbance, species of wildlife will adapt their patterns best suited for their needs. Some species will directly lose habitat, where others will directly gain habitat.
Drainage gullies	<p>There is a drainage in this area that goes to Gross Reservoir, so thought must be given to erosion control during treatments.</p> <p>Juniper in the gullies support wildlife and can cause treatment difficulties due to prescribed fire risks.</p>	<p>This unit will be treated manually so erosion effects will be minimal. This unit will have the slash lop and scattered to facilitate the prescribed broadcast burn in the near future. Design Criteria specify lopped and scattered slash shall be removed from the stream channel of perennial, intermittent, and ephemeral streams (DN, p. 36).</p> <p>Rocky Mountain juniper is highly flammable and can throw embers a significant distance depending on the burn conditions when the tree is engulfed either during a wildfire or prescribed burn scenario. The Forsythe II Project Design Criteria retains an average of one large individual, or clump of three or more, if available, per acre (DN, p. 32).</p>
Suggestion for moving unit boundary	The treatment boundary currently goes beyond the ridge so that the USFS can better apply fire to the area in the future.	Near the northeast side of unit 40, the boundary will be modified to follow the ridge line and tie into FSR 359.1. The area west of this modified line will have slash piled instead of lopped and scattered due to the amount of material that will be cut. This will reduce the torching of remaining trees during the prescribed broadcast burn.
Rocky knoll (*outside of unit 40)	There are many rocky knolls in this area and some are captured in the data points.	Knolls and rock outcrops will be excluded from treatment to maintain aesthetic values. These features

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		are identified as the highest point in the local vicinity that have a few trees exhibiting characteristics such as stunted growth, irregular crown shapes, and mature bark attributes. Treatment exclusions will extend down from the peak of the feature to the area where mechanical equipment can operate, approximately 40%, or the point where the vegetation transitions into a meadow dominated by grass and forbs (DN, p. 34).
Slash piles south of road (*outside of unit 40)		These slash piles are part of Forsythe I and are retained as wildlife piles per the Design Criteria identified in that Decision Notice (Forsythe Fuels Reduction Project DN, p. 14).
Mistletoe	Some parts of this unit have mistletoe, which requires full tree removal to eradicate. This is likely not path the USFS will pursue. However, prescribed fire will be an effective tool in eliminating mistletoe in the future.	Dwarf mistletoe is an issue in this unit as it relates to forest health. The emphasis will to cut the heaviest infested trees to minimize dwarf mistletoe spread. If dwarf mistletoe is in the overstory, it will infect similar understory tree species. It not only weakens and can eventually kill infected trees, it can reduce the seed source of that species, specifically ponderosa pine in this unit, and convert the site on south aspects to a Douglas-fir cover type. Douglas-fir isn't as drought tolerant as ponderosa pine and due to Douglas-fir's ability to seed more readily than ponderosa pine, site conversion is and has occurred in this unit and other stands across the landscape. In an environment with a warming and drying climate, sites that have converted to Douglas-fir will be less resilient over time and without a ponderosa pine seed source, pine could be eliminated from those forested sites.

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<b>Unit 63 &amp; 107 -- Ponderosa Pine Mixed Conifer &amp; Lodgepole Pine Treatment Units</b>		
Rock outcrop, some with lichens		Knolls and rock outcrops will be excluded from treatment to maintain aesthetic values. These features are identified as the highest point in the local vicinity that have a few trees exhibiting characteristics such as stunted growth, irregular crown shapes, and mature bark attributes. Treatment exclusions will extend down from the peak of the feature to the area where mechanical equipment can operate, approximately 40%, or the point where the vegetation transitions into a meadow dominated by grass and forbs. Based on this Design Criteria these features as described will be excluded from treatment; however, every hill with a rock or not, may or may not be excluded (DN, p. 34).
Evidence of recreation (campsites/rock fire pits – mostly abandoned)		Dispersed camping is a permissible activity on National Forest System lands unless an area is closed or otherwise posted. Rock fire pits can be made and if a USFS or county fire ban is not in place, then recreationists may have a fire in the rock fire pit.
Evidence of social or wildlife trail		The landscape is dynamic and as the components of the environment change either in natural (i.e. wildfire or insect epidemic) or in human caused (building a house or patch cut) disturbances, species of wildlife will adapt their patterns best suited for their needs. As they adjust to those changing conditions, finding the path of least resistance by cutting across an open field or through a dense forest will eventually turn to new trail. It is not uncommon to see large mammals,



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		being the most noticeable, incorporate human created trails or roads into their trail system.
Old slash piles		Depending on the treatment unit or aggregation where old slash piles exist, activity fuels could be incorporated into the existing piles. Some existing piles may not be addressed due to the unit design features identified in the Decision. Old slash piles across the District are a concern and as weather conditions and personnel capacity are available to burn, backlog pile conditions will be addressed.
Large trees in units		Design Criteria are in place with diameter caps that limit the size of trees that can be cut (DN, pp. 4, 5-7).
<b>Unit 74 -- 2-Staged Mixed Conifer Treatment Unit</b>		
Rocky outcrop	There are many rocky knolls here	Knolls and rock outcrops will be excluded from treatment to maintain aesthetic values. These features are identified as the highest point in the local vicinity that have a few trees exhibiting characteristics such as stunted growth, irregular crown shapes, and mature bark attributes. Treatment exclusions will extend down from the peak of the feature to the area where mechanical equipment can operate, approximately 40%, or the point where the vegetation transitions into a meadow dominated by grass and forbs (DN, p. 34).
Large or old growth trees (outside of unit or on border of unit 74 & 45)		Design Criteria are in place with diameter caps that limit the size of trees that can be cut (DN, pp. 4, 5-7). This area was also visited by three USFS wildlife biologists and the silviculturist on June 20, 2018 to determine if this area was old growth habitat. Characteristics of old growth were present in the drainage between these two units. This area was part

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		of a riparian zone as well, and the area was laid out to “not treat” (Field Notes Unit 74, 6/20/2018).
Flammulated owl nest 9 (*outside of but near unit 74 along unit 45 boundary)		<p>This site was visited by three USFS wildlife biologists and the silviculturist on June 20, 2018. There was no physical evidence that this was a flammulated owl nest site. A summary of wildlife specialists’ findings was developed and was posted on the CFRI website (Wildlife Findings, p. 1)</p> <p>Night surveys were conducted on June 6, 2018 for Flammulated owls in the Lazy Z area. Owls were detected in Forsythe II Units 74, 73, and 49. Collectively, responses indicate two to three territories. Owl nest cavities were not located.</p> <p>Design Criteria are in place to address Flammulated Owl territories. Depending upon what characteristics and treatment mechanism (mechanical or manual) are used, respective Design Criteria will be applied DN, pp. 32, 33, 40).</p>
Spring fed stream (*not in unit 74 but in unit 45 near border of unit 74)		This spring is located in a drainage between the two units. The units will be treated manually and the spring will not be affected by the treatment activities.
Recreation	<p>There is significant visible disturbance from illegal camping here.</p> <p>Creating more openings might make people more likely to damage the forest and create social trails.</p>	<p>Camping is a legal on National Forest System lands unless the area is closed or otherwise posted.</p> <p>More openings may incur additional use by private residents and recreationists. In the Unit 74 area, road access is limited by two gates. Thinning is part of the second phase of implementation so openings will be minimal.</p>
Wildlife Migration Corridors	Treatment in this area could negatively impact wildlife migration corridors; however, there	Unit 74 is part of a two-staged treatment: 1) hand pile existing down material and burn; 2) thin, hand pile,

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	<p>may be less of a concern about the cover reduction if there are alternate routes available. There seem to be a variety of alternate routes available in this area. On the other hand, there is local anecdotal evidence that clear cuts impact wildlife presence.</p> <p>Changing the treatment from a north-south orientation to an east-west orientation to better accommodate wildlife could raise questions about the impacts of wind blow-down.</p>	<p>and burn. This unit is identified as a mixed conifer treatment unit and part two will include a basal area reduction.</p> <p>The landscape is dynamic and as the components of the environment change either in natural (i.e. wildfire or insect epidemic) or in human caused (building a house or patch cut) disturbances, species of wildlife will adapt their patterns best suited for their needs. This is not applicable because the unit will eventually be thinned and not patchcut or clearcut.</p>
<p><b>Unit 1 - Lodgepole pine treatment (mechanical, Phase 1) *only observations within Unit 1</b></p>		
<p>Evidence of wildlife (deer, moose, elk)</p>		<p>The entire project area, including Unit 1, is used in one way or another by large ungulates through migration, refuge, or as seasonal range. The landscape is dynamic and as the components of the environment change either in a natural (i.e. wildfire or insect epidemic) or in a human caused (building a house or patch cut) disturbances, species of wildlife will adapt their patterns best suited for their needs. In addition to the Avenza points that the group has provided, visual sightings and evidence of deer, moose and elk use have been made throughout the project area and adjacent lands.</p>
<p>Rock outcroppings</p>		<p>Knolls and rock outcrops will be excluded from treatment to maintain aesthetic values. These features are identified as the highest point in the local vicinity</p>

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		that have a few trees exhibiting characteristics such as stunted growth, irregular crown shapes, and mature bark attributes. Treatment exclusions will extend down from the peak of the feature to the area where mechanical equipment can operate, approximately 40%, or the point where the vegetation transitions into a meadow dominated by grass and forbs (DN p. 34).
Evidence of very dense trees		Some of the areas that have dense trees have been incorporated into the patchcuts. Only up to 4.5 acres of lodgepole pine patchcuts may be cut in this unit; therefore, some dense areas will not be cut.
Large or old growth trees in units		This unit will be treated manually. Design Criteria diameter caps will be followed for individual tree species (DN, pp. 4, 5-7). Old growth is a forest condition that exhibits ecological features including, but not limited to large trees (Final Environmental Impact Statement, FEIC Appendices, Appendix B, pp. 11, 12).
Evidence of social or wildlife trail		The landscape is dynamic and as the components of the environment change either in natural (i.e. wildfire or insect epidemic) or in human caused (building a house or patch cut) disturbances, species of wildlife will adapt their patterns best suited for their needs. As they adjust to those changing conditions, finding the path of least resistance by cutting across an open field or through a dense forest will eventually turn to new trail. It is not uncommon to see large mammals, being the most noticeable, incorporate human created trails or roads into their trail system.
Area of observed high winds	A group member stated that the winds on the slopes that the Forsythe II project will treat are fast. The USFS is underestimating the erosive	The effects of wind are incorporated into the design and layout of the aggregations within the unit. Blowdown is expected to occur in both the areas that

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	<p>potential of the winds in this area. The Town does not want to address such details, but the USFS did not receive information about erosion as a result. The Town should work with the Colorado State Forest Service (CSFS) to create a fuel-break around the town. The USFS is not equipped for this kind of work because it is accustomed to operating on a much larger scale. The USFS should partner with Boulder County and the CSFS to conduct fire mitigation around Nederland.</p> <p>In response, the USFS said that it would examine windthrow and wind-scour. Wind-scour can be minimized by shaping units that run north to south and making the units smaller. Additionally, the USFS stated that CSFS prescriptions are designed to be implemented around houses. Every part of the treatment area is at least 300 feet away from the nearest house. Individual homeowners can choose to collaborate with the CSFS to create defensible space around their houses, but not many people have done that so far.</p>	<p>are treated and are not treated. Wind effects will be minimized to the extent possible with aggregation orientation and location placement.</p> <p>The site was visited by a USFS Hydrologist, Soil Scientist, Forester, and Silviculturist on June 4, 2018 to conduct field observations and discuss Soil Erosion and Runoff. It was determined that the existing effective ground cover was very high. A Hydrologist/Soils specialist’s summary was developed and was put on the CFRI website (Hydrologist/Soils Findings, p. 1, 2).</p>
Evidence of downfall or fallen trees		Some of the fallen trees and slash will be incorporated into the aspen enhancement and expansion aggregations and will be piled, burned, or chipped. Patchcuts will be oriented and arranged to minimize the impacts of future blowdown, but some is anticipated as a result of implementation.
Orchids present		On June 14, 2018, a USFS Botanist evaluated the Jim Cowart’s email specifically identifying pink fairy slipper ( <i>Calypso bulbosa</i> ) and purple lady’s slipper

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		(Cypripedium fasciculatum) as being protected under the Regional Forester’s Sensitive Species List. The Botanist determined that both species are considered to be secure throughout their range as well as within the planning area on the Boulder Ranger District. The email correspondence was put on the CFRI website (Botany Findings, pp. 1-3).
Spring present		Appropriate Design Criteria will be followed around the spring and riparian vegetation (DN, pp. 35, 36 38).
Unique or tree species of concern (mixed conifer)		Assuming this is for limber pine. The DN states limber pine will not be cut unless it is a hazard to operations (DN, pp. 5, 6, 7).
Beautiful view area		Unit 1 does provide a view of the surrounding area pretty much from the existing road system that is in place. Being able to see the surrounding area should not be impacted by the treatment activities within Unit 1. This treatment will be seen from different vantage points around the town of Nederland. A conscious effort to minimize the visual impacts will be considered during the layout of the treatments.
Gully or drainage area	A participant noted that “j-shaped” cuts were discussed for Unit Two to avoid creating any square edges in the treatment areas. The DAT recommended that all of the polygons be irregular. The USFS will not disturb drainages and has leeway to tailor the cuts depending on conditions on the ground.	On-the-ground conditions dictated the shape and boundaries of the cut units. Boundary lines were established in an irregular pattern. Design Criteria were incorporated around the drainages (DN, pp. 36, 38).
Erosion	Two group members discussed concerns about runoff stemming from the treatments. This area flows into Barker Reservoir and some neighbors are experiencing serious runoff on these slopes even without clear-cuts. The DAT recommended that treatments should be	The site was visited by a USFS Hydrologist, Soil Scientist, Forester, and Silviculturist on June 4, 2018 to conduct field observations and discuss soil erosion and runoff. It was determined that the existing effective ground cover was very high. A Hydrologist/Soils specialists’ summary was

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	<p>irregularly shaped to reduce impacts to viewsheds and potential for windfall. It should also recommend that erosion be prevented, particularly for Unit One. As the polygons are currently drawn, they do not look irregular; they look like chutes for wind and water. Flashfloods are common in this area and these cuts could make them more dangerous. The group members recommended cutting in irregular shapes running parallel to one another to block the wind and reduce erosion. The group members recommended that USFS and Boulder County hydrologists examine the runoff issue, especially because it impacts drinking water from Barker Reservoir.</p> <p>The USFS responded to these concerns about runoff by noting that the current polygons are just general locations designed to provide an idea of forest composition. The exact shape of the cuts can be changed. If the two landowners allow their buffers to be cut the polygon will be elongated. The USFS is open to putting “turns” into the cuts. The proposed cuts currently run north to south because the westward wind is less intense that way. The aspen, ponderosa, and mixed conifer treatments are going to be more exact, but there is flexibility for the lodgepole cuts, which will probably be modified in some ways.</p>	<p>developed and was put on the CFRI website (Hydrologist/Soils Findings, p. 1, 2).</p> <p>Aggregation design and location will minimize the erosion concerns. The field trip on July 21, 2018 involved a walkthrough and discussion about the treatments in unit 1. The maps with Avenza points for unit 1 were referred to during the evaluation.</p> <p>One landowner adjacent to National Forest System lands has agreed to the USFS cutting within the Defensible Space Zone boundary along the property line. A patchcut has been laid out within the Defensible Space Zone. Patchcuts are aligned to minimize visual concerns from the town of Nederland, oriented to minimize wind effects as much as possible, and minimal in size (largest patchcut is 1.75 acres).</p>
Input discourages patch cutting in the unit as a whole	This group member also said that patch-cuts were not appropriate in this area even with the 300-foot buffer because new fuels will grow in	Because the forest is a dynamic system, any type of Silvicultural system, whether it is thinning, patchcutting, clearcutting, or prescribed broadcast

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	<p>these patch-cuts. Grasses and other surface fuels will grow back.</p> <p>The USFS said that it will pile and burn cut trees using manual crews because of the steepness of the terrain. The USFS will evaluate each patch-cut to determine whether it needs to plant other species such as limber or conifer to diversify the lodgepole area. Some conifer will probably regrow naturally in the patch-cuts as well.</p>	<p>burning will incur new vegetative growth. Even doing nothing, vegetative biomass growth and processes would continue to increase both in live and dead forms. Vegetation management is not a one-time entry. Similar to defensible space mitigation on private lands, treatments have to be maintained in order to meet their objectives.</p> <p>After the cutting and piling has been completed within the patchcuts, the area will be evaluated for follow-up artificial regeneration needs.</p>
<b>Unit 2 – Lodgepole pine treatment (mechanical, Phase 2)</b>		<b>Unit 2 has been changed to a manual treatment and will be treated under Phase 1.</b>
Gully present		Appropriate Design Criteria will be followed around streams and riparian vegetation (DN pp. 35, 36, 38).
Discouraged to cut areas (logistic concerns or social value areas)		The DAT’s proposal was evaluated on the ground and patchcut boundaries established. Patchcuts were established in the densest pockets that can be treated manually with chainsaws and hand crews. Comments by the MMG in relation to this unit were also considered and incorporated in the layout.
Large or old growth trees in units		This unit will be treated manually. Design Criteria diameter caps will be followed for individual tree species (DN, pp. 4, 5-7). Old growth is a forest condition that exhibits ecological features including, but not limited to large trees (Final Environmental Impact Statement, FEIC Appendices, Appendix B, pp. 11, 12).
Area of observed high winds		The effects of wind are incorporated into the design and layout of the aggregations within the unit. Unit size and alignment (north/south) were emphasized to the level the conditions on the ground allowed. Some



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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
		blowdown is expected to occur in both the areas that are treated and not treated.
Beautiful view area		<p>The majority of unit 2 is heavily forested and does not offer views of the surrounding landscape outside of the ridge and previously treated patchcuts. Views of the surrounding landscape will be enhanced in the areas where patchcut/clearcuts are implemented.</p> <p>This treatment may be seen from different vantage points east of Nederland. A conscious effort to minimize the visual impacts was considered during the layout of the treatments.</p>
Evidence of social or wildlife trail		<p>The landscape is dynamic and as the components of the environment change either in natural (i.e. wildfire or insect epidemic) or in human caused (building a house or patch cut) disturbances, species of wildlife will adapt their patterns best suited for their needs. As they adjust to those changing conditions, finding the path of least resistance by cutting across an open field or through a dense forest will eventually turn to new trail. It is not uncommon to see large mammals, being the most noticeable, incorporate human created trails or roads into their trail system.</p>
Evidence of wildlife (moose, elk)		<p>The entire project area, including unit 2, is used in one way or another by large ungulates through migration, refuge, or as seasonal range. The landscape is dynamic and as the components of the environment change either in a natural (i.e. wildfire or insect epidemic) or in human caused (building a house or patch cut) disturbances, moose and elk will adapt their patterns best suited for their needs. In addition to the Avenza points that the group has provided, visual sightings and evidence of moose and elk use</p>

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
		have been made throughout the project area and adjacent lands (Terrestrial Wildlife Specialist Report, pp. 64-67).
Spring present (outside of, but possibly downhill from treatment unit)		Appropriate Design Criteria will be followed around the spring and riparian vegetation (DN, pp. 35, 36, 38).
Evidence of very dense trees		The areas identified by the DAT were evaluated first to determine if the treatments could be applied on the ground in those locations. Concerns for this unit by both the DAT and MMG were evaluated and considered during layout. The patchcuts that were prepped were in the densest areas that could be treated manually with chainsaws.
Evidence of downfall or fallen trees		One specific area of blowdown that was brought forward by the DAT on their field trip around units 85, 86, and 100 will be included as a patchcut. The existing down material will be piled along with the activity fuels from the cutting. This will assist with the blowdown closest to the Big Springs subdivision.
Unique or tree species of concern (limber pine, ponderosa)		Limber pine will not be cut unless it poses a hazard to the implementation of the project. Ponderosa pine above 14" DBH will be retained per the Design Criteria (DN, pp. 5-7).
<b>Units 3 &amp; 4 – Lodgepole pine treatment units (mechanical)</b>		<b>Units will be treated manually. Due to the expense of road improvements and in order to address concerns in these units, both will be treated manually.</b>
Large or old growth trees in units		This unit will be treated manually. Design Criteria diameter caps will be followed for individual tree species (DN, pp. 4, 5-7). Old growth is a forest condition that exhibits ecological features including, but not limited to large trees (Final Environmental Impact Statement, FEIC Appendices, Appendix B, pp. 11, 12).

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
<p>Input discourages cutting at spatial point (logistic concerns/social value)</p>	<p>A group member requested that USFS leave an area of healthy, large lodgepole in the northeast portion of unit 4. The area was thinned in the recent past and does not have much surface fuel or blowdown. There are also social trails in the area.</p> <p>A group member noted that the terrain on the north-facing slopes on the southern edge of unit 3 is steep so that area may be difficult to treat.</p>	<p>Based on feedback from the MMG, this area has not been included into a patchcut/clearcut.</p> <p>Due to steepness of the area, this treatment unit will be implemented with manual crews utilizing chainsaws.</p>
<p>Input recommends cutting/thinning at spatial point</p>	<p>A group member said that there is small, dense lodgepole around the existing clear-cuts in these units that the USFS could cut.</p> <p>A group member recommended cutting a southwestern portion of unit 3 and the angled bottom portion of the unit 4 polygon. Connecting clear-cuts could supplement these cuts on the western edge of Unit Three. However, there is not much aspen to enhance in and around the clear-cuts and treatment might be difficult in an area with steep terrain and considerable blowdown</p> <p>A group member noted that no group member had visited the southeastern portion of unit 4 yet. This area consists of the eastern slope of a large hill further up from the aspen clone that</p>	<p>The identified areas in unit 3 (units 96, 97, and 98) are identified to be treated under the Regeneration Thin Rx from the decision (DN, p. 6). The area identified by the MMG is less than ½ acre in size and does not fit the criteria of an aggregation (DN, p.5).</p> <p>A patchcut was incorporated into the location identified by the MMG in unit 3. A patchcut was not put into unit 4 in this location due to the drainage. One aggregation (Douglas-fir Mixed Conifer - 3.4 acres) was layed out in unit 4 (DN, p. 5).</p> <p>One patchcut and one aggregation of Douglas-fir Mixed Conifer Thin have been identified to be cut in this vicinity.</p>

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
	Phase 1 addresses. The area is a potential site for treatment.	
Past treatment evidence and/or issues		There is evidence of past patchcut activities in unit 3; these cut are areas will be thinned with the regeneration thin prescription (DN, p.6).
Evidence of social or wildlife trail	A group member marked a wildlife trail that deer, elk, and moose use on the southeastern corner of unit 3.	The landscape is dynamic and as the components of the environment change either in a natural (i.e. wildfire or insect epidemic) or in human caused (building a house or patch cut) disturbances, species of wildlife will adapt their patterns best suited for their needs. As they adjust to those changing conditions, finding the path of least resistance by cutting across an open field or through a dense forest will eventually turn to new trail. It is not uncommon to see large mammals, being the most noticeable, incorporate human created trails or roads into their trail system.
Gulley or streams present	Group members noted that a drainage in a densely forested area will be tough to treat because of the steep slope on which it lies.	Appropriate Design Criteria will be followed around streams and riparian vegetation (DN, pp. 35, 36, 38).
Unique or tree species of concern (limber pine)		Limber pine will not be cut unless it poses a hazard to the implementation of the project (DN, pp. 5-7).
Aspen stands and associated considerations	The USFS noted that aspen clones and meadows may or may not be treated, but if they are, they will follow the guidelines outlined in the Design Criteria.	Aspen aggregations were not identified in units 3 and 4 to be treated.
Observations about trees or forest structure		Thank you for pointing out and identifying the forest structure in this unit. There is one Douglas-fir mixed conifer aggregation identified in unit 4 that will be thinned in addition to three patchcuts.

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
<b>Unit 24 -- Lodgepole pine treatment unit (mechanical)</b>		
Input discourages cutting at spatial point (logistic concerns/social value)	<p>There was concern that the south-central area of Unit 24 is well-spaced and should not be patch-cut.</p> <p>The northeast part of the unit has a well-spaced canopy. MMG members would not like the USFS to patch-cut there.</p> <p>The area northwest of Unit 24 is defensible space and so probably cannot be treated. This constrains treatment options.</p>	<p>The Decision identifies that treatments can be treated either mechanically or manually (DN, p. 6) in order to meet the objectives of the Project. Unit 24 is accessible with the existing road system and will not require additional road improvements to implement the 4.8 acres of patchcuts with mechanical equipment. The two patchcuts that were identified on the field trip will utilize some of the existing boundaries of the patchcuts that were not implemented during the Forsythe Fuels Reduction Project (2012).</p> <p>The identified aspen by the MMG is less than ½ acre in size and will not be treated as an aspen aggregation and the “regeneration area” identified on the map on the south end does not fit the criteria of a regeneration thin in the Decision (DN, p. 6).</p> <p>Defensible space areas at this point will not be cut within this unit. Adjacent landowners have not requested to cut to the boundary.</p>
Input recommends cutting/thinning at spatial point	The MMG proposed that the USFS place a patch-cut between the road and powerlines on this unit. However, the USFS said that doing so would create larger snow drifts on the road. A group member noted that the shade from the trees currently in the center of the road may cause snow to stay there longer than it otherwise would. Some group members said that there have not been problems with snow from similar clear-cuts on Magnolia Road. The	As noted in the column to the left, the unit is less than one acre in size and the orientation of the road (east to west) in this location would heighten wind speeds and the effects of blowdown and drifting snow where Lazy Z Road turns at the east end.

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
	<p>road on unit 24 is maintained by the county and serves as a school bus route. The USFS said that snow is a reason that it would not want to cut the trees in the center of the road. The area in the middle of the road is less than one acre.</p> <p>The road itself serves as a potential fuel-break that could become effective if it was widened.</p> <p>An MMG member suggested scalloping the forest just below the road in the center of the unit.</p> <p>Feathering or scalloping some cuts on the southwestern corner of the unit could give it a more natural look. The USFS could move a patch-cut towards the center of the unit to remove some dense trees from a slope.</p>	<p>The orientation of the road (east to west) funnels the wind and widening the gap between vegetation would exacerbate wind effects to the stretch of road and area where Lazy Z Road turns on the east end of the unit.</p> <p>Roads are conducive to fuel breaks, but due to the road orientation, short linear distance of the area proposed to be cut, benefits from a road fuelbreak are minimal. A strip clearcut on either side of Lazy Z through NFS lands and private lands would be beneficial to the landowners who live there because it would offer reduced exposure to convective heat and flames during a wildfire event to people evacuating an area with only one way in and one way out.</p> <p>All treatment areas will be reviewed by a USFS Landscape Architect prior to final unit layout. Unit boundaries shall be natural edges whenever possible and prevent the appearance of uniform tree spacing and straight line boundaries. (DN, p. 32).</p> <p>Boundary lines shall be established by feathering and scalloping (DN, p. 32).</p>

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
	<p>The USFS needs to cut almost 5 acres in this unit. MMG members suggested cutting nearer to the road in the south-center of the unit and the southeast portion of the unit beneath the road. Additionally, there are some dense, young, regenerated trees in the south-central portion of the unit suitable for thinning. The USFS will examine these possibilities the next time it visits the unit.</p> <p>There are aspens in the northwest of the unit above the road. Removing conifer there could modify fire behavior.</p>	<p>The “regeneration thin” area did not fit the criteria for regeneration thin because the trees are taller than 15’ (DN, p. 6). The unit is being treated mechanically and the material will be removed from the site. The trees identified by the MMG are too small to economically treat with mechanical equipment.</p> <p>The identified aspen by the MMG is less than ½ acre in size and will not be treated as an aspen aggregation.</p>
Evidence of very dense trees	The lodgepole is denser below the road on the eastern end of the unit	The trees are denser and smaller in some locations. Treating mechanically isn’t conducive to cutting trees averaging less than 6” DBH.
Marked trees	There are some trees marked with paint on the northern portion of the unit. A group member wondered about the meaning of the ribbons and paint colors on trees in this unit. The USFS said that trees may have been painted pink to take an inventory of tree volume. Orange indicates a boundary and double-painting indicates where a turn in the treatment boundaries occurs. This unit has not been painted yet. These old marks are from two 4-acre clear-cuts from the Forsythe I project that were designated for a timber sale.	Explained during the meeting (see the column to the left).
<b>Unit 39 - Douglas fir/mixed conifer treatment (mechanical)</b>		<b>Unit will be treated manually</b>
Large or old growth trees in units		This unit will be treated manually. Design Criteria diameter caps will be followed for individual tree

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
		species (DN, pp. 4, 5-7). Old growth is a forest condition that exhibits ecological features including, but not limited to large trees (Final Environmental Impact Statement, FEIC Appendices, Appendix B, pp. 11, 12).
Rock outcroppings, some with lichens	There are rocky outcrops in the northeastern portion of unit 39. These may be in a defensible space zone. The USFS has not received permission from landowners to treat this area, but it might.	Knolls and rock outcrops will be excluded from treatment to maintain aesthetic values. These features are identified as the highest point in the local vicinity that have a few trees exhibiting characteristics such as stunted growth, irregular crown shapes, and mature bark attributes. Treatment exclusions will extend down from the peak of the feature to the area where mechanical equipment can operate, approximately 40%, or the point where the vegetation transitions into a meadow dominated by grass and forbs (DN, p. 34). The USFS has not been contacted about treating within the defensible space zone along the boundary of unit 39; thus, the defensible space zone will not be treated. Part of unit 39 will be followed with a prescribed broadcast burn and in that area, cut vegetation will be lopped and scattered. In unit 39 where the slash will be piled, piles will not be constructed on the rock outcrops.
Evidence of social or wildlife trail		The landscape is dynamic and as the components of the environment change either in natural (i.e. wildfire or insect epidemic) or in human caused (building a house or patch cut) disturbances, species of wildlife will adapt their patterns best suited for their needs. As they adjust to those changing conditions, finding the path of least resistance by cutting across an open field or through a dense forest will eventually turn to new trail. It is not uncommon to see large mammals,



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		being the most noticeable, incorporate human created trails or roads into their trail system.
Evidence of wildlife (deer, fox, moose, elk, bird nests)		The entire project area, including unit 39, is used in one way or another by large ungulates, predators, and birds through migration, foraging, refuge, or as seasonal range. The landscape is dynamic and as the components of the environment change either in a natural (i.e. wildfire or insect epidemic) or in human caused (building a house or patch cut) disturbances, species of wildlife will adapt their patterns best suited for their needs (Terrestrial Wildlife Specialist Report, pp. 64-67, 87, 88).
Aspen stands and associated considerations		The prescription for this unit will enhance aspen stands by removing conifers found within aspen clones where the opportunity is available consistent with the direction outlined in the final decision (DN, p. 4-6).
Unique or tree species of concern (RM juniper, limber pine, blue spruce)		Limber pine will only be cut if it is a hazard to the implementation of the project (DN, pp. 5-7). Blue spruce are generally located within the stream zone and most likely would not be cut due to their size (DN, pp. 4, 5). The decision notice and Design Criteria outline the guidelines that address the cutting and retention of Rocky Mountain juniper (DN, p. 32).
Questions/observations about tape or other markings		Past boundary marking (paint and flagging is evident and remains from the original Forsythe I project that was not implemented.
Evidence of recreation		Thank you for the feedback. It is not uncommon to see evidence of recreational activities across the forest.
Gully, stream, or possible spring present		Appropriate Design Criteria will be followed around streams and riparian vegetation (DN, pp. 35, 36, 38).
Observations about trees or forest structure	A stream in the southeastern part of the unit has massive ponderosa pine above the cut limit.	The unit will be cut manually with chainsaws. The focus will be on cutting ladder fuels. Diameter caps

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
	However, adjacent trees may serve as ladder fuels. MMG members who walked the area did not recall seeing much undergrowth.	(14" DBH) for all conifers are in place for mixed conifer stand treatment units (DN, pp. 4, 5).
<b>Units 42, 75 &amp; 76 – Lodgepole pine treatment units (mechanical)</b>		<b>Units will be treated manually</b>
Large or old growth trees in units		This unit will be treated manually. Design Criteria diameter caps will be followed for individual tree species (DN, pp. 4, 5-7). Old growth is a forest condition that exhibits ecological features including, but not limited to large trees (Final Environmental Impact Statement, FEIC Appendices, Appendix B, pp. 11, 12).
Past treatment evidence and/or issues		Some areas within the units have fuels from previous treatments on the ground. With the change from mechanical treatment to manual, the decision was made to locate the patchcuts in locations with the densest “dog hair” thickets.
Unique or tree species of concern (limber pine, blue spruce, aspen)	There is limber pine in the east-central portion of Unit 76 mixed with dense lodgepole. The USFS said that it favors limber pine in treatment and would leave it.	Limber pine will only be cut if it is a hazard to the implementation of the project (DN, pp. 5-7). Blue spruce are generally located within the stream zone and most likely would not be cut due to their size (DN, pp. 4, 5).
Observations about trees or forest structure		Diameter cap limits will be maintained as part of the DN (pp. 4, 5, 7, 36, 46, 47). The forest structure is varied and includes some “dog hair” thickets of lodgepole pine. Because the unit is being treated manually with chainsaws, the patchcuts were located in these areas to meet the objective mimic variable structural and spatial patterns on the landscape.
Evidence of social or wildlife trail		The landscape is dynamic and as the components of the environment change either in natural (i.e. wildfire or insect epidemic) or in human caused (building a house

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
		or patch cut) disturbances, species of wildlife will adapt their patterns best suited for their needs. As they adjust to those changing conditions, finding the path of least resistance by cutting across an open field or through a dense forest will eventually turn to new trail. It is not uncommon to see large mammals, being the most noticeable, incorporate human created trails or roads into their trail system.
Evidence of wildlife (elk)		The entire project area, including Units 42, 75 & 76, is used in one way or another by elk through migration, refuge, or as seasonal range. In addition to the Avenza points that the group has provided, visual sightings and evidence of elk use have been made throughout the project and adjacent areas. The landscape is dynamic and as the components of the environment change either in a natural (i.e. wildfire or insect epidemic) or in human caused (building a house or patch cut) disturbances, elk will adapt their patterns best suited for their needs (Terrestrial Wildlife Specialist Report, pp. 64-67).
Evidence of downfall or fallen trees		The emphasis for patchcut location was in small dense thickets of lodgepole pine. Some downed material may be incorporated into piles in these locations.
Observations about trees or forest structure		The unit will be cut manually with chainsaws. Emphasis for cutting will be in the densest “dog hair” thickets.
Observations of cryptogrammic soil	There is unique cryptogrammic soil with lichen or fungi on the southern end of unit 76. The MMG requested the USFS not disturb that soil.	The area will be avoided.
Evidence of dense trees		Units 42, 75, and 76 are being manually treated, handpiled, and then later burned. The layout and

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
		preparation for these units will emphasize cutting in the denser, “dog-hair” areas.
Evidence of downfall or fallen trees		The emphasis for patchcut location was in small dense thickets of lodgepole pine. Some downed material may be incorporated into piles in these locations.
Input recommends cutting/thinning at spatial point	There is “dog-hair” forest in the middle of Unit 76. This would be good to cut.	Units 42, 75, and 76 are being manually treated, handpiled, and then later burned. The layout and preparation for these units will be emphasizing the cutting in the denser, “dog-hair” areas.
Input discourages cutting/thinning at spatial point	The western arm of unit 75 includes well-spaced, larger trees that MMG members would like the USFS to leave.	Units 42, 75, and 76 are being manually treated, handpiled, and then later burned. The layout and prep emphasized cutting the denser, “dog-hair” areas and avoided the western arm.
<b>Units 43 &amp; 68 -- Douglas fir/mixed conifer treatment (mechanical)</b>		<b>Units will be treated in Phase 3/4 Information will be brought forward.</b>
Input discourages cutting at spatial point (logistic concerns/social value)	There is a cluster of large lodgepole in the northeastern portion of Unit 43. The lodgepole is dense and includes young Douglas fir. There are large ponderosa and spruce trees to the northeast of this area. The USFS will check to see if there is a drainage in the area.	This unit will be treated manually so large lodgepole pine most likely would not be cut. The Douglas-fir in the understory most likely would be cut. If a drainage is encountered, appropriate Design Criteria would be implemented (DN, pp. 35, 36, 38).
Input recommends cutting/thinning at spatial point	<p>There are some well-spaced, average-sized ponderosa pine in the southwestern portion of unit 43. The USFS could thin some of the regenerated vegetation there, which could function as ladder fuel.</p> <p>The USFS could thin lodgepole in the northeast of unit 68. That area is steep, so the USFS will</p>	<p>The area will be evaluated to determine if the area could be steered towards an uneven sized aggregation (retaining trees of all size classes) and not just cut ladder fuels.</p> <p>The unit will be treated manually. Because the unit is identified as Mixed Conifer unit, an aggregation of lodgepole pine treatment (patchcut) could be</p>

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
	evaluate whether it should be treated manually or mechanically.	identified and treated as long as the guidelines in the (DN p. 5) are met.
Large or old growth trees in units		This unit will be treated manually. Design Criteria diameter caps will be followed for individual tree species (DN, pp. 4, 5-7). Old growth is a forest condition that exhibits ecological features including, but not limited to large trees (Final Environmental Impact Statement, FEIC Appendices, Appendix B, pp. 11, 12).
Evidence of social or wildlife trail		The landscape is dynamic and as the components of the environment change either in natural (i.e. wildfire or insect epidemic) or in human caused (building a house or patch cut) disturbances, species of wildlife will adapt their patterns best suited for their needs. As they adjust to those changing conditions, finding the path of least resistance by cutting across an open field or through a dense forest will eventually turn to new trail. It is not uncommon to see large mammals, being the most noticeable, incorporate human created trails or roads into their trail system.
Unique or tree species of concern (Englemann Spruce)		Because Englemann spruce is a minor species component across the landscape, it would not be prioritized to cut. If there was a group of spruce, then they would be thinned to meet the fuel objectives of the Project.
Aspen stands and associated considerations		The prescription for this unit will enhance aspen stands by removing conifers found within aspen clones where the opportunity is available consistent with the direction outlined in the final decision (DN, p. 4-6). (DN, 4-6).

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
Open area or meadow		Open areas and meadows will be expanded and enhanced by cutting conifers to the diameter cap limitations identified with the Decision (DN, pp. 4, 5, 7).
Rocky outcroppings (with views)		Knolls and rock outcrops will be excluded from treatment to maintain aesthetic values. These features are identified as the highest point in the local vicinity that have a few trees exhibiting characteristics such as stunted growth, irregular crown shapes, and mature bark attributes. Treatment exclusions will extend down from the peak of the feature to the area where mechanical equipment can operate, approximately 40%, or the point where the vegetation transitions into a meadow dominated by grass and forbs (DN, p 34).
Evidence of dense trees		This is a mixed conifer treatment unit so dense pockets of trees can be thinned when the species composition is mixed conifer. If the dense trees are lodgepole pine, they can be treated with either a regeneration thin or patchcut depending on tree size (DN, pp. 5, 6).
Observations about trees or forest structure	There is spruce along the drainage in the southwestern part of Unit 43. The USFS could promote aspen in that area as well.	Due to the size of spruce in drainages, the diameter cap limit will most likely be exceeded; thus, they would not be cut (DN, p. 5). Design Criteria for diameter caps, stream, and riparian vegetation will be followed. (DN, pp. 5, 6, 35, 36, 38)
Suggestion for moving the unit boundary	There was some confusion because the northern curve in the boundary of Unit 43 appeared to be far too close to a house. The USFS explained that its mapping program may have missed the buffer zone. The USFS will shift the boundary down to provide the home with its standard buffer.	The buffer zone will be measured from the coincident property lines 300' into the unit as identified in the DN (p. 4 Table 1; p. 7, Defensible Space/No Cut Buffer; p. 47, Table 3).

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
<b>Units 45 &amp; 48 – Douglas fir/mixed conifer and Ponderosa pine mixed conifer (mechanical)</b>		<b>Units will be treated manually</b>
Input discourages cutting/thinning at spatial point (logistic concerns/social value)	<p>A group member said that the portion of unit 45 near unit 43 has shady lodgepole forest favored by ungulates and other desirable features. The group member asked the USFS not to cut this area.</p> <p>A group member said that the portion of unit 45 adjacent to unit 43 is favorable for regeneration treatments. The USFS could thin the Douglas fir in this area, which is already somewhat open and address the present ladder fuels. The group member asked the USFS to treat the understory in this area because the trees themselves are mostly healthy and well-spaced.</p> <p>A group member asked the USFS not to be "too heavy-handed" when treating the open ponderosa and lodgepole pine in the mid-northeastern portion of Unit 48 because this area has social value. The area also possesses rocky knolls, a drainage area, and songbirds, so it may not be suitable for treatment. However, there is downed material just west of that area that may be fit for treatment. Additionally, there is small, dense ponderosa suitable for treatment to the southwest of the area.</p>	<p>It is unclear where this area is located. During layout the forester who established the boundaries did not recall the area as described. He thought the area may be in units 43 or 68 possibly. We will look again to see if the area can be identified in unit 45 and evaluate how to not treat or treat with considerations.</p> <p>Patches of regeneration will be thinned as part of the prescription.</p> <p>It's unclear what social value is referenced. The area will be treated manually with chainsaws in order to meet the objectives for the project. The entire unit will be thinned less intensively due to the limitations of manual labor compared to mechanical equipment. Rocky knolls and drainages will have appropriate Design Criteria applied (DN, pp. 34, 35, 36, 38). The suggested areas to evaluate and treat are appreciated.</p>

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
Input recommends cutting/thinning at spatial point	<p>A group member suggested treating the area near the road fork. This area has a lot of blowdown and is relatively open lodgepole and ponderosa forest. The USFS could expand these openings.</p> <p>A group member said that the southeastern corner of unit 48 possesses small, dense ponderosa that seems suitable for thinning.</p>	<p>Expanding openings in tree canopies assists with meeting fuel reduction objectives and maintaining a mosaic of forest structure on the landscape. This condition would be described in the prescription as applicable.</p> <p>The area will be evaluated to thin and meet the objectives of the Project. By thinning, there will be an opportunity to provide space and less competition for the remaining ponderosa pine to grow.</p>
Large or old growth trees in units		<p>This unit will be treated manually. Design Criteria diameter caps will be followed for individual tree species (DN, pp. 4, 5-7). Old growth is a forest condition that exhibits ecological features including, but not limited to large trees (Final Environmental Impact Statement, FEIC Appendices, Appendix B, pp. 11, 12).</p>
Evidence of social or wildlife trail	<p>A group member marked the presence of wildlife trails in the portion of unit 45 lying directly above unit 48. The group member also marked an arc of aspen patches located near a drainage running along the northern portion of unit 48.</p>	<p>The landscape is dynamic and as the components of the environment change either in a natural (i.e. wildfire or insect epidemic) or in human caused (building a house or patch cut) disturbances, species of wildlife will adapt their patterns best suited for their needs. As they adjust to those changing conditions, finding the path of least resistance by cutting across an open field or through a dense forest will eventually turn to new trail. It is not uncommon to see large mammals, being the most noticeable, incorporate human created trails or roads into their trail system.</p>
Evidence of wildlife (elk, moose, turkey, song birds, lion kill)	<p>Group members noted that these units possess north-facing slopes with a considerable amount of slash available to be piled and</p>	<p>The entire project area, including units 45 &amp; 48, is used in one way or another by large ungulates, predators, and birds through migration, foraging,</p>



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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
	<p>burned. Generally, group members recommended not treating south-facing slopes in these units because they include moist, shady habitat with a significant number of ungulates.</p> <p>The USFS responded to concerns about the impacts of such treatments to ungulates like elk by stating that there are still many elk living in recently treated areas around Nederland. The treatments have left narrow corridors for the elk to move between units. However, a group member expressed concern that future treatments might diminish the range of these elk.</p> <p>Group members who walked the northern part of unit 48 near unit 45 found a possible mountain lion kill in the area. One group member said that a recent video published by mountain lion researchers working near Mount Lyons indicated that three or four mountain lions were living in the Forsythe II area. The group members asked the USFS if there were</p>	<p>refuge, or as seasonal range. The landscape is dynamic and as the components of the environment change either in a natural (i.e. wildfire or insect epidemic) or in human caused (building a house or patch cut) disturbances, species of wildlife will adapt their patterns best suited for their needs (Terrestrial Wildlife Specialist Report, pp. 64-67, 87, 88).</p> <p>Increasing grass-forb and shrub-seedling forest structural stages Forest-wide is an emphasis objective in Forest Plan for elk (Forest Plan Chapter 1, page 6; FEIS, Appx G, page 9). Overall, forage availability appears to be decreasing in some areas, as mixed conifer stands become denser and canopy openings become smaller. However, within and surrounding the project area, fuels treatments on NFS and County lands in recent years have created relatively large openings north and south of Magnolia Drive east of Highway 119 and in West Magnolia, resulting in an increase in the grass-forb stage of lodgepole pine forests in the project area. Elk have been observed foraging in these openings. (Terrestrial Wildlife Specialist Report, pp. 65).</p> <p>The EA also covered Region 2 Forest Service Sensitive species and Arapaho and Roosevelt National Forests Management Indicator Species. Although mountain lions are not on either of these lists, they were covered in the Specialist Report. <i>“Forested corridors in the project area are important for a variety of wildlife species, especially larger mammals including elk, mule deer, moose, mountain lions, and black bears. Defined in the 1997 Forest Plan by a combination of forest</i></p>

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
	<p>any criteria covering mountain lions in the EA. The USFS responded that the EA only covered T&amp;E species.</p> <p>There are several mountain lion kills on these Units. Mountain lions are not mentioned in the Environmental Assessment (EA) or the DN. Group members would like more information about the historical response of mountain lions to these types of treatments.</p>	<p><i>structural stages, minimum area of 20 acres, minimum width of 100 meters, and maximum width of gaps or interruptions of 100 meters, mapped forested corridors are abundant Forest-wide</i> (Terrestrial Wildlife Specialist Report, pp. 92).</p> <p>The importance of forested corridors, covered in the specialist report and defined in the forest plan, was brought forward and covered under <i>Appendix C of the DN, Design Criteria, Patchcut/Clearcut Areas (DN, p. 36): Involve a USFS Wildlife Biologist during layout of patchcuts/clearcuts to determine needs for narrow areas and/or island exclusions for wildlife crossing and cover.</i></p> <p>In researching how “historical response of mountain lions to these types of treatments,” the biologist was only able to find one peer reviewed journal in jstor: <i>Reactions of Mountain Lions to Logging and Human Activity</i>:  <a href="https://www.jstor.org/stable/pdf/3801496.pdf">https://www.jstor.org/stable/pdf/3801496.pdf</a></p> <p>For additional information related to this topic, please contact Colorado Parks and Wildlife. Peter Boyatt, Wildlife Officer (South Boulder), 720-724-4824, <a href="mailto:peter.boyatt@state.co.us">peter.boyatt@state.co.us</a>; Kristin Cannon, Area Wildlife Manager, 970-472-4461, <a href="mailto:kristin.cannon@state.co.us">kristin.cannon@state.co.us</a></p>
Unique or tree species of concern (RM juniper)		The decision notice and design criteria outline the guidelines that address the cutting and retention of Rocky Mountain juniper (DN, p. 32).

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
Stream or drainage in unit		Appropriate Design Criteria will be followed around the streams and riparian vegetation (DN, pp. 35, 36, 38).
Aspen stands and considerations		The prescription for this unit will enhance aspen stands by removing conifers found within aspen clones where the opportunity is available consistent with the direction outlined in the final decision (DN, p. 5-6).
Rocky knoll or rocky outcrop		Knolls and rock outcrops will be excluded from treatment to maintain aesthetic values. These features are identified as the highest point in the local vicinity that have a few trees exhibiting characteristics such as stunted growth, irregular crown shapes, and mature bark attributes. Treatment exclusions will extend down from the peak of the feature to the area where mechanical equipment can operate, approximately 40%, or the point where the vegetation transitions into a meadow dominated by grass and forbs (DN, p. 34).
Open area or meadow	There is an open area in the center of Unit 45. The USFS could thin the understory of the Douglas fir in the area. The forest seems quite healthy	Open areas and meadows will be expanded and enhanced by cutting conifers to the diameter cap limitations identified within the Decision (DN pp. 7, 47).
Observations about trees or forest structure	The USFS commented that the presence of ponderosa and Douglas fir on south-facing slopes on these units means that the basal area that the USFS will remove will be different than it would be for lodgepole treatments. In this case, the USFS would prefer to treat the ponderosa rather than the lodgepole pine.	Mixed conifer stands have limitations on the amount of basal area that can be removed. Lodgepole pine has an acreage limitation up to 30% within an identified treatment unit. Douglas-fir on south aspects would be targeted to cut in this case due to its intolerance to drought conditions especially on a south aspect.

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
<b>Units 49 &amp; 73</b>		<b>Units will be treated in Phase 3 &amp; 4 Information will be brought forward</b>
Input recommends cutting/thinning at spatial point	Units 73 and 48 have areas of skinny ponderosa pine that seems suitable for thinning. However, the USFS noted that if those areas are thinned it will be easy for snow loads to knock the trees over. It might make more sense to clear the area to let trees regrow altogether.	The area will be evaluated to determine the best prescription for this location.
Stream or drainage in unit	MMG members marked the tops of some drainages for the USFS to review. Group members did not walk the entire drainage.	Appropriate Design Criteria will be applied to the respective drainage classification.
Aspen stands and considerations		The prescription for this unit will enhance aspen stands by removing conifers found within aspen clones where the opportunity is available consistent with the direction outlined in the final decision (DN, p. 5-6).
Rocky knoll or rocky outcrop		Knolls and rock outcrops will be excluded from treatment to maintain aesthetic values. These features are identified as the highest point in the local vicinity that have a few trees exhibiting characteristics such as stunted growth, irregular crown shapes, and mature bark attributes. Treatment exclusions will extend down from the peak of the feature to the area where mechanical equipment can operate, approximately 40%, or the point where the vegetation transitions into a meadow dominated by grass and forbs (DN, p. 34).
Evidence of wildlife (flickers, red tail hawks)	MMG members marked wildlife trails on these units; scat can provide a general picture of where animal populations can be found.	Refer to the Terrestrial Wildlife Specialist Report for information regarding migratory birds (Terrestrial Wildlife Specialist Report, pp. 87, 88). Refer to the Design Criteria in the Decision regarding the

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
	<p>In general, the space between south and north slopes on these units is flatter, cooler, and wetter. MMG members found a lot of elk scat there and it seems that elk like this habitat. MMG members recommended that the USFS thin those areas less and instead thin more on south slopes to meet basal percentage targets. Similarly, there are shady, wet areas in the northeastern part of unit 73 that should be thinned less so that there is sufficient cover for elk.</p> <p>A USFS biologist noted that the areas with scat are probably the easiest places for elk to travel.</p>	<p>protection of raptor nests and activity (DN, pp.32, 33, 40).</p> <p>Units 49 &amp; 73 were surveyed during the summer of 2018 for active Northern Goshawk and Flammulated Owl nests/territories. Male Flammulated Owls were detected in both units, but nests were not located. There were no detections of Northern Goshawks and no other raptor nests were located.</p> <p>Population trends on a landscape scale have been captured with CPW's and Boulder County's elk migration mapping of the elk corridor that passes through the Forsythe II Project area. Past fuels treatments have increased available forage for elk and proposed fuels treatments with Forsythe II would further increase forage in portions of the project area. In addition to the Avenza points that the group has provided, visual sightings and evidence of elk use have been made throughout the project and adjacent areas.</p> <p>These units will be treated manually with chainsaws in Phase 3 which will result in less basal area being cut throughout the entire area of both units. Comments will be considered in unit layout and prescription development.</p>

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
	<p>However, these units are quite large and it is hard to capture population trends on the landscape level using Avenza points. If a treatment occurred in one place, the elk would probably move somewhere else. The biologist noted that it is difficult for USFS staff to cover the entirety of these units, so staff will take of this input on elk activity into consideration. MMG members should consider elk populations at the landscape scale when providing this input, but the more information that MMG members provide to USFS biologists, the more they can say about elk concentrations in the area.</p> <p>A group member requested that the USFS preserve large swathes of cover in areas where elk and mountain lions are present. The group member stated that 100 feet of buffer for coverage is insufficient. In response, a USFS biologist stated that the treatments would still leave cover for predators and ungulates. The USFS' wildlife biologist will be consulted by the treatment team about what needs to be considered before treatment. Accordingly, this input is helpful for the USFS' biologists. It can inform modifications to treatment boundaries. The USFS will not just ignore the presence of mountain lions. That is the purpose of the MMG.</p> <p>The USFS said that it could maintain cover on north slopes, but there are too many trees on south slopes and they need to be thinned.</p>	<p>The landscape is dynamic and as the components of the environment change, elk will adapt their patterns best suited for their needs. As they adjust to those changing conditions, finding the path of least resistance by cutting across an open field or through a dense forest will eventually turn to new trail.</p> <p>Population trends on a landscape scale have been captured with CPW's and Boulder County's elk migration mapping of the elk corridor that passes through the Forsythe II Project area.</p> <p>Buffers between pathcuts/clearcuts are in place to provide wildlife corridors in lodgepole pine treatment units. These units are identified as Ponderosa Pine Mixed Conifer which will be thinned up to a 50% BA reduction. The residual BA will still provide cover for predators and large ungulates. The design of the project reduces stand densities to varying levels. Stand densities on north aspects are higher than on south aspects. For example a north aspect may have a basal area of 120 sq. ft. per acre and a south aspect may have a basal area of 70 sq. ft. per acre. After thinning up to 50%, the basal areas on each aspect could be 60 and 35 sq. ft. per acre. Adjacent areas to the treated units would maintain their existing basal areas, 120 and 70 sq. ft. per acre respectively until a natural disturbance modifies and impacts the surrounding landscape. Stand structural vegetation heterogeneity across the</p>

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
	<p>Mountain lion kills will be found in the area, but the habitat is expansive. The USFS said that MMG members have provided information that their observations indicate are diminished, but there are probably new species and vegetation present in treated areas as well. West Magnolia and other past treatment areas probably now host species that were not previously present.</p> <p>There are golden eagles in the Twin Sisters area and one in Boulder Canyon.</p>	<p>landscape provides habitat for a wide range of wildlife species.</p> <p>There are three golden eagle territories that have been monitored over the past few years in the Gross Reservoir vicinity. These areas will be continued to be monitored annually. Appropriate Design Criteria and operating periods will be applied per the Decision (DN, pp. 32, 40).</p>
<p>Observations about trees or forest structure</p>	<p>MMG members marked an aspen stand for enhancement.</p> <p>There is mistletoe among the ponderosa and some Douglas fir at the southern end of unit 49.</p>	<p>Aspen is an aggregation that can be treated within the identified treatment unit. Aspen treatment units and aggregations have diameter cap limits of 14" DBH for PP and DF and 12" DBH for LPP. A minimum of 5 of the largest available dead trees will be retained (PP/DF- min. 10" DBH, LPP- min. 8" DBH); PP snags preferred to retain. If min. number of snags is not available, then the largest available live, green replacement trees will be retained for future snags (DN, pp. 4, 5, 6, 33).</p> <p>One of the objectives for the Forsythe II Project is to restore ponderosa pine/mixed conifer stands toward their characteristic species composition, structure, and spatial patterns in order to increase resistance and resiliency to future natural disturbances. Even though dwarf mistletoe is a component in this landscape, it is at higher levels and raises concern in regards to forest health. Emphasis, where possible,</p>

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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
		will be placed to reduce and moderate the effects of dwarf mistletoe on these two conifer species. This unit will be implemented during Phase 3.
Downed Material	<p>There is a lot of downed material in this area. MMG members would prefer that this downed material be piled and burned. The USFS would like to remove the downed material but doing so is expensive and the USFS cannot broadcast burn the area.</p> <p>A group member asked if the USFS would remove downed material from unit 74. The USFS said that this would not necessarily be the case. The treatment of unit 74 was originally intended to be carried out in two stages, but the USFS is now considering treating it all at once instead of burning the slash piles, which could scorch the overstory. Units designated for mechanical treatment will utilize equipment to bring downed material to a landing site. For manually-treated units, the USFS will work to minimize the potential for erosion.</p>	<p>During layout and as the prescription is developed, the area will be evaluated to address the amount and arrangement of the downed material and if some can be incorporated into a contract.</p> <p>Unit 74 will be treated manually so material will not be physically removed from the unit. Unit 74 is a two-staged treatment unit: the first is to pile existing slash and burn; second entry is to thin, pile and burn the activity slash.</p>
Input discourages cutting/thinning at a spatial point	<p>The north-central portion of unit 73 could be thinned less.</p> <p>An MMG member said that a USFS wildlife biologist mentioned in the EA that wildlife had been squeezed into narrow corridors near Kelly Dahl and Nederland by 2014 clear cuts. The group member suggested the USFS</p>	<p>This unit will be treated manually during Phase 3. The location will be evaluated to determine what level of thinning is needed to meet the objectives of the Project and concerns brought forward.</p> <p>Overall, forage availability appears to be decreasing in some areas, as mixed conifer stands become denser and canopy openings become smaller. However, within and surrounding the project area, fuels treatments on NFS and County lands in recent years</p>



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Common Themes Among Points in Each Unit	Group Discussion at MMG Meeting	USFS Response
	<p>maintain a balance between cover and forest openings across treatment areas. The USFS said it would not maintain more cover in the Forsythe II area to account for larger cuts in Kelly Dahl and elsewhere. The group member said that the USFS wildlife biologist had said clear cuts had been so extensive on the western end of Magnolia that the emphasis in that area now should be on maintaining cover.</p> <p>The southwestern arm of unit 73 is steep, and a group member said that it did not leave much area to cut. The USFS said that that area will be treated manually, even though it is in Phase 2, which largely consists of mechanical treatments. The USFS will transfer some sub-aggregations to manual treatment. The USFS will walk the units to identify the need for manual treatment. Portions of unit 49 may be treated mechanically.</p>	<p>have created relatively large openings, resulting in an increase in the grass-forb stage of lodgepole pine forests in the project area. Elk have been observed foraging in these openings</p> <p>Unit 73 will be treated manually in Phase 3.</p>
Rocky knolls or rocky outcrops	MMG members marked some knolls, but not all of the ones that they could have marked. The USFS noted that the Design Criteria for knolls is intended to protect larger knolls.	Knolls and rock outcrops will be excluded from treatment to maintain aesthetic values. These features are identified as the highest point in the local vicinity that have a few trees exhibiting characteristics such as stunted growth, irregular crown shapes, and mature bark attributes. Treatment exclusions will extend down from the peak of the feature to the area where mechanical equipment can operate, approximately 40%, or the point where the vegetation transitions into a meadow dominated by grass and forbs (DN, p. 34).

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**Outstanding MMG Requests for More Information from Kevin Zimlinghaus**

**September 2017- N/A**

**November 2017- N/A**

**February 2018- General Comments:**

**“More information about available fire modeling technology and analysis would be useful.”**

To predict potential fire behavior across the project area for the existing conditions, representative fuel models were chosen. Fuel models are used in fire behavior prediction models and describe the predominant type of surface fuel that would carry fire across an area. The fuel models used for this analysis were obtained from the “Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel’s Surface Fire Spread Model” also known as the new set of 40 fuel models (Scott & Burgan, 2005). The new set of 40 fuel models are broken down by general fire-carrying fuel type. Additional information concerning fire modeling used for the Forsythe II Project can be found in the Fire/Fuels/Air Resource Specialist Report at the following: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd524587.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd524587.pdf)

**March 2018- General Comments:**

**“Kevin Zimlinghaus will find out more about hydrological objectives for the Forsythe II units.”**

Though the Forsythe II Project objectives were primarily focused on the restoration and resiliency of vegetated landscapes in a heavily populated wildland urban interface, the effects of the prescribed treatments for all resources were completed during the analysis. The project area provides a critical community resource to Denver as Gross Reservoir is one of their municipal water sources. Water resource objectives were not identified for the Forsythe II Project; however, issues were identified by the Interdisciplinary Team relating to the Hydrology/Fisheries resources (DN, p. 14). These issues were used to develop the action alternatives, mitigation measures, and design elements to address the effects of the proposed activities for the project. More detailed information about these issues can be found in Chapter 1, Section 1.7 of the Forsythe II Project Environmental Assessment ([https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd549691.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd549691.pdf)).

The Hydrology and Fisheries Resources Report ([https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd524595.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd524595.pdf)), for the Forsythe II Project outlines the effects on the affected watersheds within the Project boundary as they relate to the affected environment, water quality, and hydrology. In addition to the Project Design Criteria (DN, pp. 35, 38, 39, 41-43), Best Management Practices ([https://www.fs.fed.us/naturalresources/watershed/pubs/FS\\_National\\_Core\\_BMPs\\_April2012.pdf](https://www.fs.fed.us/naturalresources/watershed/pubs/FS_National_Core_BMPs_April2012.pdf)) that are appropriate for the water resource will be followed during the implementation of the Project.

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**April 2018-General Comments:**

**“Before any treatment begins, USFS wildlife biologists will complete the old-growth survey. They will determine if owl feathers found by community members in this area came from a flammulated owl, which would exempt the area from treatment. Goshawk identification would also exempt an area from treatment. The USFS will conduct the old-growth survey and look for endangered birds, and then bring back the results of these surveys to the MMG.”**

This question was in reference to the area between units 45 and 74. This site was visited by three USFS wildlife biologists on June 20, 2018, and there was no physical evidence that this was a flammulated owl nest site. See site visit report on CFRI website (<https://cfri.colostate.edu/wp-content/uploads/sites/22/2018/07/fnwildlife26june18.pdf>). Nest site protection areas and limited operating periods will be in place where nest sites are located (DN, pp. 33, 40). This information was also shared at the MMG at the June, 2018 meeting.

**May 2018-General Comments:**

**“Another group member added that a lot of this species mapping was probably completed in the Forsythe II project’s environmental assessment (EA) and environmental impact statement (EIS). If that is the case, the group member suggested using species lists from those documents as starting points. The USFS responded that while that information is in the EA, it is not fully available for public display due to the USFS’ concerns about the risk of poaching and other species sensitivities. However, the USFS stated that it would examine the possibility of creating maps of wildlife corridors and of using species lists from the EA and EIS.”**

The Terrestrial Wildlife Specialist Report, ([https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd525367.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd525367.pdf)), was completed for this project to determine the likely effects of the proposed action and alternatives to wildlife species and habitats, according to direction in the 1997 Revision of the Land and Resource Management Plan for the Arapaho and Roosevelt National Forests and Pawnee National Grassland (Forest Plan). The wildlife biologist analyzed specific Threatened and Endangered and Proposed Species, Region 2 Forest Service Sensitive Species, and Arapaho and Roosevelt Management Indicator Species (Terrestrial Wildlife Specialist Report, pp. 30-85). In the Specialist Report, the biologist also analyzed Management Indicator Communities, such as aspen and its representative, warbling vireo (Terrestrial Wildlife Specialist Report, pp. 85-87). The biologist discussed the elements behind the Memorandum of Understanding between the US Forest Service and the US Fish and Wildlife Service to protect migratory birds (Terrestrial Wildlife Specialist Report, pp. 87-88). The report outlines Forest-wide Direction Standard and Guidelines including how important Effective Habitat is during season of primary use by elk and deer (Terrestrial Wildlife Specialist Report, pp. 88-91). It also expresses how essential Forested and Open Corridors are for a variety of wildlife species, especially larger mammals including elk, mule deer, moose, mountain lions, and black bears (Terrestrial Wildlife Specialist Report, p. 92).

This analysis incorporated internal data and the maps of habitats and corridors provided by Boulder County and Colorado Parks and Wildlife as a baseline to determine the effects to the aforementioned species in the Specialist Report. This composite of information combined with the Avenza points that were identified by the MMG have all guided the design and influenced the layout of the implementation units.

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**June 2018- General Comments:**

**Kevin Zimlinghaus' Action Items:**

- **Write the group a clear guide to treatment rules for basal area reductions in terms of a unit's dominant cover type, treatment types, and the other species of trees found in a unit and its stands.**

The basal area reduction refers to mixed conifer (Douglas-fir, ponderosa pine) treatment units and aggregations. For Douglas-fir mixed conifer treatment units and aggregations, up to 40% of the existing basal area can be cut. For the ponderosa pine mixed conifer treatment units and aggregations, up to 50% of the existing basal area can be cut (DN, p. 4). Aggregations of other vegetation types can be cut within these treatment units and their volume will be incorporated into the overall total of basal area removal that is allowed. For example, if a meadow/shrubland area is present in the unit, the volume of the conifers that are cut will be accounted into the overall basal area reduction percentage in Mixed Conifer Stands. Aggregations of other vegetation types will follow the guidelines directed in the Decision (DN, pp. 5-7). In another example, if an aggregation of Douglas-fir Mixed Conifer is identified in a lodgepole pine treatment unit, then the aggregation's basal area can be reduced up to 40%. A lodgepole pine treatment unit does not have a basal area reduction cap. As such, the volume within the Douglas-fir Mixed Conifer aggregation would be added to the volume cut within the patchcut/clearcut.

- **Share information with the group about the impacts of clear-cuts in unit 43 to the viewshed when that information is available.**

Unit 43 is identified in the Forsythe II Decision as a Douglas-fir Mixed Conifer Treatment. This means the majority of the unit will be thinned with up to 40% of the existing basal area cut. Because this unit will be treated manually, most likely the basal area reduction will be below 40%. There may be aggregations (1/2-5 acres in size) of aspen and lodgepole pine that would be treated under the guides established in the Decision for those Treatment Types (DN, p. 5). It is anticipated, where present, these aggregation acres would account for approximately 30% of the total acres of the unit which equates to 42 acres.

Unit 43 has been moved to Phase 3 and layout/prep will occur in 2019. At that time, we will have a better understanding of the planned treatment activities within the unit and how they will affect the viewshed.

- **Find out why some trees in unit 24 were painted pink.**

Unit 24 was also part of the Forsythe I Project and this unit was layed out and prepped as a small timber sale in hopes of having small, local contractors bid on the contract; however, the FS did not receive any bids. The pink flagging identified the trees that were cruised and incorporated into the volume estimate to cut for the contract.

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**Questions/Comments for Response for the USFS received since the June 2018 Meeting**

- **How does the USFS' wildlife biologist influence the Forsythe II Design Criteria?**

Through the analysis of the project each resource specialist drafted Design Criteria that they determine needs to be in place to minimize the impacts to their specific resource. Design Criteria from all of the resources are reviewed by the Interdisciplinary Team and Line Officer before they are finalized.

- **“I would like to urge FS to consider removing the dead material in conjunction with the treatment they have planned. (Not just when it is convenient).”**

This project identified only one unit, unit 74, where a 2-staged mixed conifer treatment would occur to treat the existing fuel loadings as part of the overall unit treatment. However, some existing surface fuel will be piled with the activity fuels generated from planned treatment activities and eventually burned. Additionally, existing surface fuel in addition to activity fuels, will be treated in units that are identified for prescribed broadcast burning.

- **“I would also like to see some of this material chipped and broadcast instead of burned.”**

Design Criteria is in place to allow chipping as an option for treating the fuels once the vegetative treatment has been completed. In chipped areas, chip depth shall average less than 3”. Chip depth of up to 5” may occur over small areas (not to exceed 5% of the treatment unit). Chips shall be distributed in a mosaic pattern over no more than 30% of the activity area (DN, p. 32).

**Questions/Comments for Response regarding Aggregations**

- **The DN states that unit may contain aggregations of ½ to 5 acres in size of the other dominant stand conditions. This would indicate that we aren't talking about scattered trees; to be dominant would indicate there are more of these trees than other species in this aggregation and that it needs to be at least ½ acre. In fact, under lodgepole treatment it says to “retain all mixed conifer inclusions of a ½ acre or less” and only “if the inclusion is larger, thinning as prescribed could be implemented.**

This comment came from the field trip to unit 1. In this case, there are more aspen stems than conifer stems in the areas identified for an aspen aggregation. The aspen stems may be smaller in some areas because of fire exclusion and suppression of the conifers that are present, but there are more stems of aspen than conifers which fits the description brought forward, above.

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- **The cut distance from aspen clones was originally 50'. This was changed to 30'. It was very specifically 30' from aspen trees, not from an arbitrary border around an aspen aggregate. The DN describes cutting 30' from the aspen clone, not from the unit border, not from an arbitrary border around multiple groups, nor from scattered individual trees.**

The cut distance changed from 50' to 30' from the edge of the aspen clone as is stated and identified in the Decision (DN p. 6, 47). Throughout the entire analysis process the “buffer” was in place from the aspen clone (although with the change in distance) and not the distance from individual aspen trees (DN, p. 6, 47).

An aspen clone, stand or group of aspen trees is considered a singular organism with the main life force underground in the extensive root system. Before a single aspen trunk appears above the surface, the root system may lie dormant for many years until the conditions are just right, including sufficient sunlight. In a single stand, each tree is a genetic replicate of the other, hence the name a “clone” of aspens used to describe a stand. Stems from an aspen clone may be of varying sizes and over time in the absence of disturbance (ie. fire) have succumbed to suppression and the overall aggregation reduction due to shading of overstory conifers that have choked out healthy aspen trees and stems.

As aspen stands mature, they may begin to deteriorate as openings in the forest canopy are left by dying trees. Often, in the West, aspen is replaced by conifers in the absence of disturbance. On dryer sites, aspen may revert to rangeland dominated by shrubs, forbs, and grasses. However, root suckering will generally occur in the aspen stands as they deteriorate or as they are disturbed by fire or other events. When an aspen tree dies or as light becomes available from openings, chemical signals from the tree to the roots stimulate new sprouts to start growing. Through this regrowth, an aspen clone usually lives much longer than its individual trees. Even though individual aspen trees are not very old, aspen clones can be hundreds of years old.

An “arbitrary border” or line delineating an aspen clone is established to include as much aspen and restore aspen’s potential to re-establish on the landscape as an objective in the Decision (DN, p. 2). The direction outlined in the DN identifies the intent and methodology for the Forest Service to implement cutting treatments in order to meet these objectives where the Decision has been made.

- **If there are “dominant” species aggregations in any of the lodgepole units that are to be treated per their species prescription, then it makes sense that the lodgepole pine portion of the unit is reduced by that amount of acreage and the patch-cuts would also be reduced.**

Units were identified based on the primary vegetation cover type to establish a baseline for the prescription treatments that would be developed for each unit. In lodgepole pine units, the available acres to patchcut/clearcut (up to 30%) is based on the unit acres identified in the decision. Aggregations, where present, could treat up to 30% of the unit’s decision acres in addition to the acres that were patchcut/clearcut.

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- **Terminology is confusing:**

- **These aggregations can be expected to occur across 30% of any given unit and across more than 50% of the treatment units.**

During the Forsythe II Project analysis, treatment units were identified at a coarse scale. Within the treatment units, it was expected that aggregations of mixed conifer, lodgepole pine (both regeneration and more mature), aspen, and meadows/shrublands may be present. “In situations where aggregations occur across a unit, the appropriate treatment for that stand type will be implemented...” (DN, p. 5). Where aggregations are found in a treatment unit during layout, up to 30% of the Decision acres for the specific unit could be included to be treated under the appropriate prescription. During the Forsythe II analysis, it was estimated that aggregations within the Project Units occurred across 50% of the area (DN, pp. 4-7).

- **Concern that the Forest Service will be treating 30% of every unit under different treatments than the public has been told.**

During the Forsythe II analysis, it was foreseen that some units will have situations where a management unit might contain aggregations of other dominant stand conditions from what it was delineated as for planning purposes. These aggregations within the Project Units were expected to occur across 30% of any given unit and across more than 50% of all treatment units. This was disclosed to the public in the DN (p. 5, Vegetation Treatments) and the Forsythe II Project EA (pp. 38, 42, 46, 50). The effects of treating these aggregations were considered in the environmental analysis (Forsythe II Project EA, pp. 89, 132, 134, 137, 138, 140) and Resource Specialist Reports.

In Phases 1 and 2, the level of aggregations identified for treatments is significantly less, 96% (6 acres total), than what was estimated (153 acres) for planning purposes.

- **For mixed conifer stands, if the goal was to cut 40% of the existing basal area in a unit, why wouldn't you say cut 40% instead of up to 40%?**

The project analysis considered and included both manual (hand crews with chainsaws) and mechanical (heavy equipment) treatment methods. With mechanical equipment the objective of cutting 40% can easily be obtained. However, hand crew with chainsaws have size limitations in moving larger material into piles. Manually cut units in mixed conifer will not meet the 40% basal area reduction because smaller material is primarily treated which doesn't account for much volume. The wording “up to” was included so resource specialist could perform their analyses based on the most extensive level of treatment that could be possible, while recognizing that it may not occur in all situations.

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- **There are supposed to be 100' untreated buffers between patchcuts and clearcuts.**

Correct, there will be 100' buffers between patchcuts and 100 meters (330') between clearcuts.