United States
Department of
Agriculture

Forest Service

April 2017

Middle Fork Weiser River Landscape Restoration Project

FINAL ENVIRONMENTAL IMPACT STATEMENT

Volume 2–Appendices
Payette National Forest

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Office of the Assistant Secretary for Civil Rights

1400 Independence Avenue, SW

Washington, D.C. 20250-9410;

(2) fax: (202) 690-7442; or

(3) email: program.intake@usda.gov.

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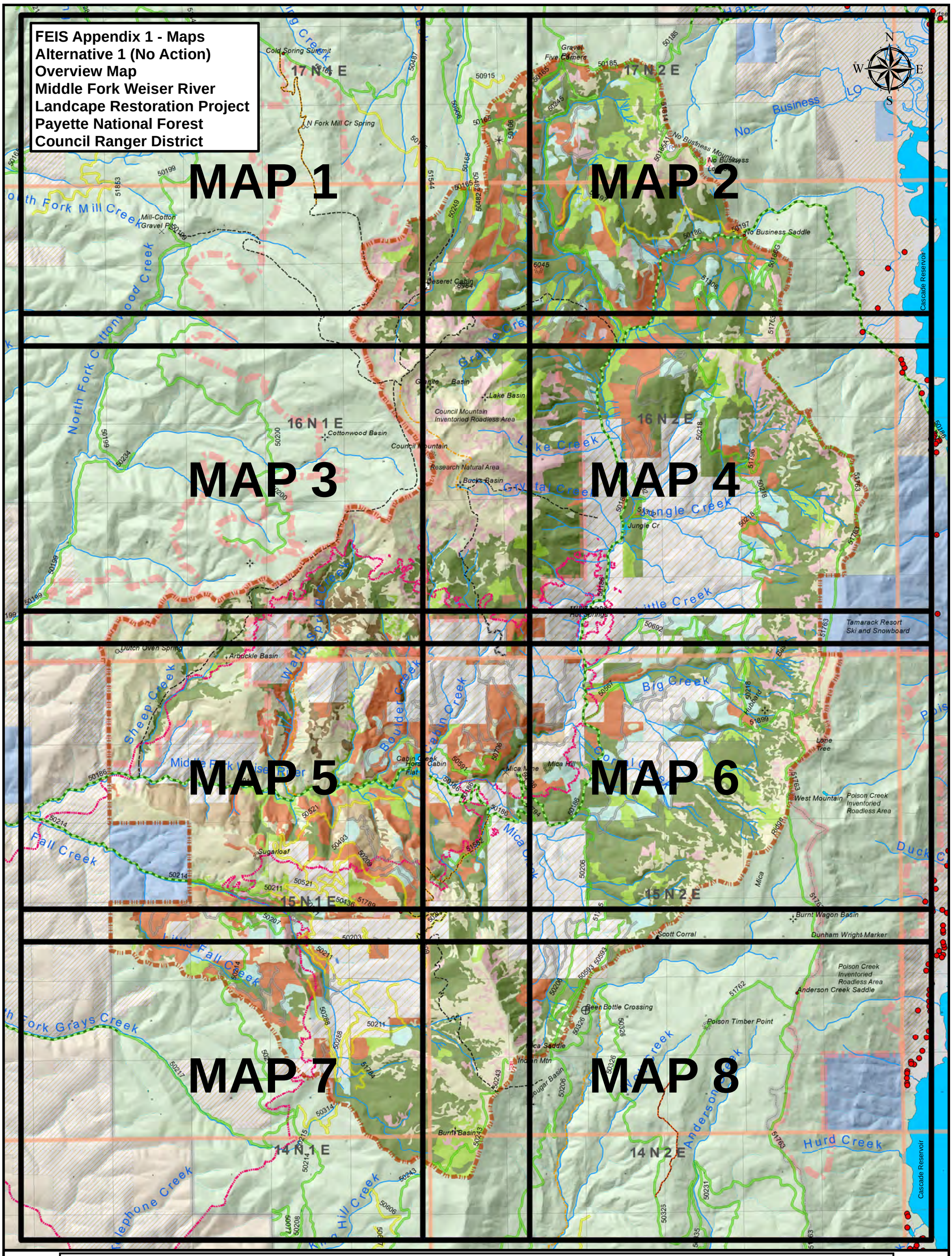
FEIS Appendix 1 - Maps
Alternative 1 (No Action)
Overview Map
Middle Fork Weiser River
Landcape Restoration Project
Payette National Forest
Council Ranger District
MAP 1
MAP 2
MAP 3
MAP 4
MAP 5
MAP 6
MAP 7
MAP 8
17 N 1 E
17 N 2 E
16 N 1 E
16 N 2 E
15 N 1 E
15 N 2 E
14 N 1 E
14 N 2 E
Cold Spring Summit
N Fork Mill Cr Spring
North Fork Mill Creek
Mill-Cotton Gravel Pit
North Fork Cottonwood Creek
Cottonwood Basin
Council Mountain Inventoried Roadless Area
Research Natural Area
Bucks Basin
Lake Basin
Jungle Creek
Tamarack Resort Ski and Snowboard
Dutch Oven Spring
Arbuckle Basin
Sheep Creek
Warm Spring Creek
Boulder Creek
Cabin Creek
Big Creek
Hubbard
Lone Tree
West Mountain
Poison Creek Inventoried Roadless Area
Fall Creek
Sugarloaf
Mica Creek
Duck Creek
Burnt Wagon Basin
Scott Corral
Dunham Wright Marker
Little Fall Creek
Poison Creek Inventoried Roadless Area
Anderson Creek Saddle
Poison Timber Point
Burnt Basin
Hurd Creek
Cascade Reservoir
Legend Alternative 1
Road Type
C - COUNTY, PARISH, BOROUGH
NFSR - NATIONAL FOREST SYSTEM ROAD
STATE
Displayed On Individual Maps
UNAUTHORIZED
P - PRIVATE
PVT - UNDETERMINED
Road Status
CLOSED
OPEN
SEASONAL
Existing Trails
ATV
OHV
Motorcycle
Non-motorized
Streams
Intermittent
Perennial
Lakes
Vegetation Type
Burned Areas, FS
Clearcuts, FS
Sapling/Poles
Hardwoods or High Brush
Immature/Mature Forest
Mature/Over-mature Forest
Partial Cuts Forest
Nonforest
Unsuitable Lands
Water
Geographic Points
basin
cabin
camp
campground
corral
crossing
flat
gap
gravel pit
guard station
hot spring
lookout
mine
radio tower
spring
summit
Project Area
Payette National Forest
Grays Creek Fire
Inventoried Roadless Areas
Ownership
BLM
USFS
Private Land
State of Idaho
Valley Co. Improved Values
Valley Co. Improved Values
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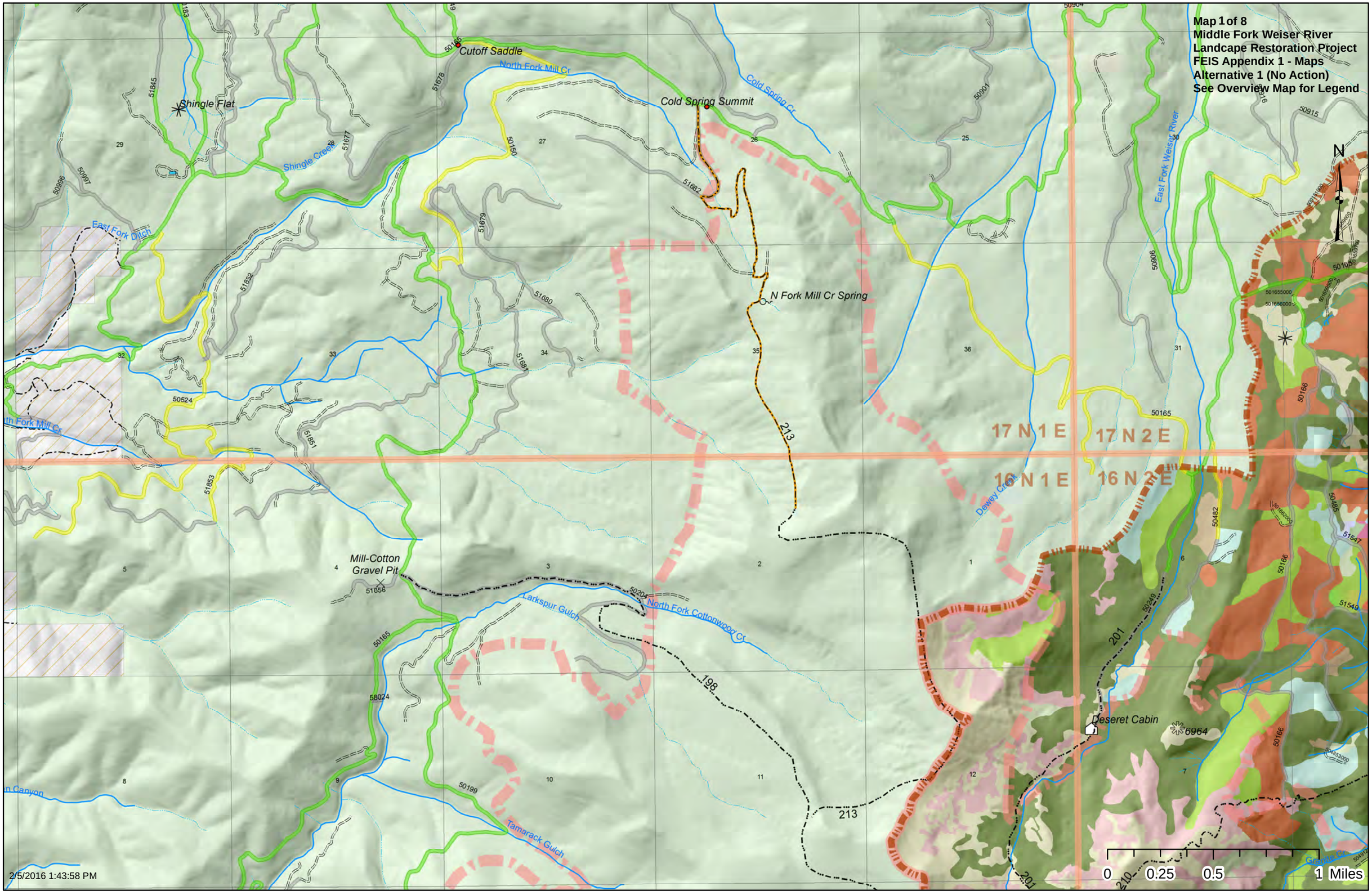
Map 1 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 1 (No Action)
See Overview Map for Legend
Cutoff Saddle
North Fork Mill Cr
Cold Spring Summit
Cold Spring Cr
Shingle Flat
Shingle Creek
East Fork Weiser River
East Fork Ditch
N Fork Mill Cr Spring
17 N 1 E
17 N 2 E
16 N 1 E
16 N 2 E
Dewey Creek
Mill-Cotton
Gravel Pit
Larkspur Gulch
North Fork Cottonwood Cr
Deseret Cabin
6964
Tamarack Gulch
213
198
201
N
0
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1 Miles
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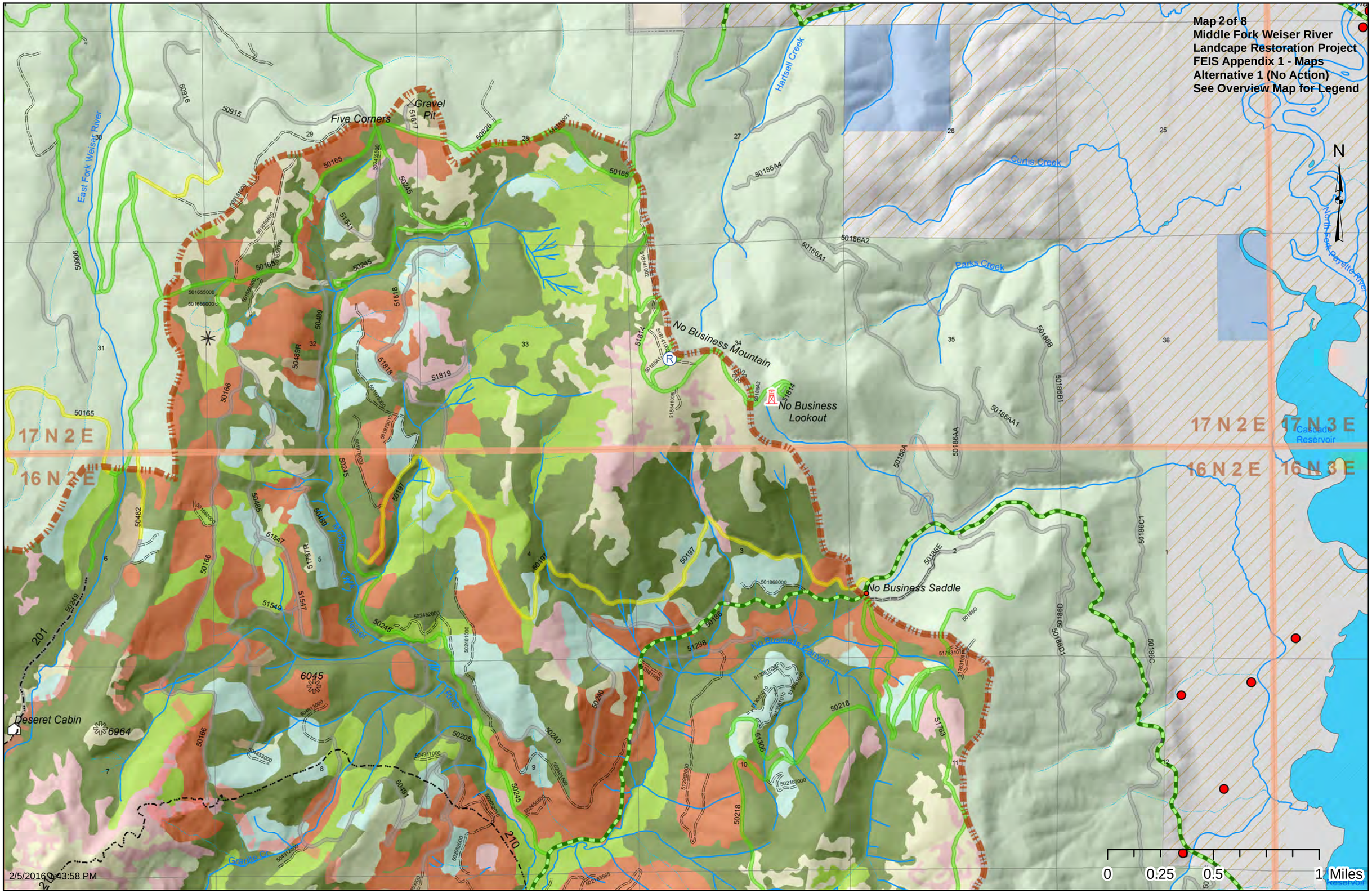
Map 2 of 8
Middle Fork Weiser River
Landcape Restoration Project
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Alternative 1 (No Action)
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N
Five Corners
Gravel Pit
East Fork Weiser River
Hartsell Creek
Curtis Creek
Parks Creek
North Fork Payette River
No Business Mountain
No Business Lookout
No Business Saddle
Deseret Cabin
Cascade Reservoir
17 N 2 E
17 N 3 E
16 N 2 E
16 N 3 E
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6964
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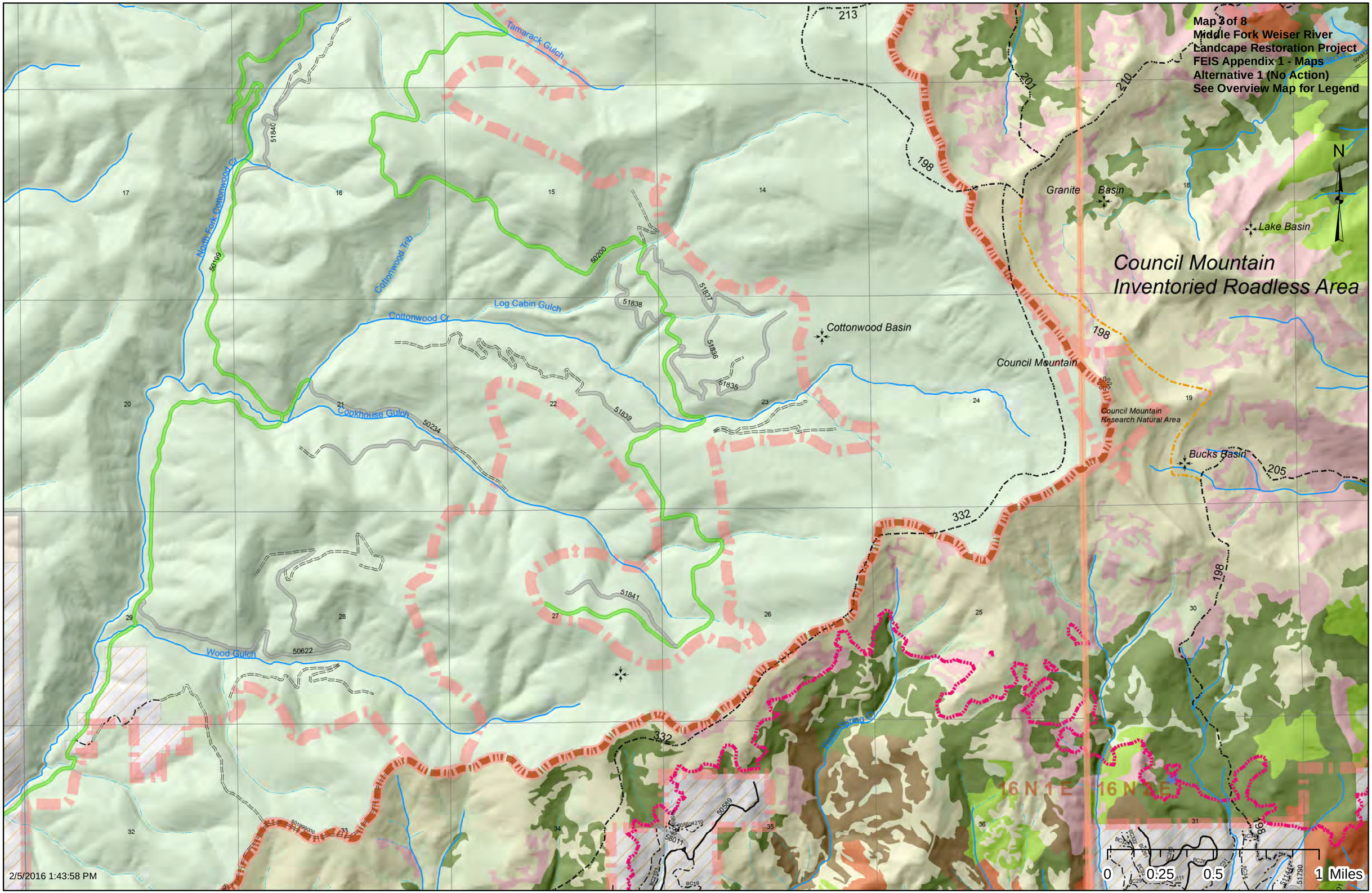
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Middle Fork Weiser River
Landcape Restoration Project
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Alternative 1 (No Action)
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N
Council Mountain
Inventoried Roadless Area
Granite Basin
Lake Basin
Cottonwood Basin
Council Mountain
Council Mountain
Research Natural Area
Bucks Basin
Tamarack Gulch
North Fork Cottonwood Cr
Cottonwood Trib
Log Cabin Gulch
Cottonwood Cr
Cookhouse Gulch
Wood Gulch
Weiser Spring Cr
16 N 1 E
16 N 2 E
213
201
210
198
205
332
51840
50199
50200
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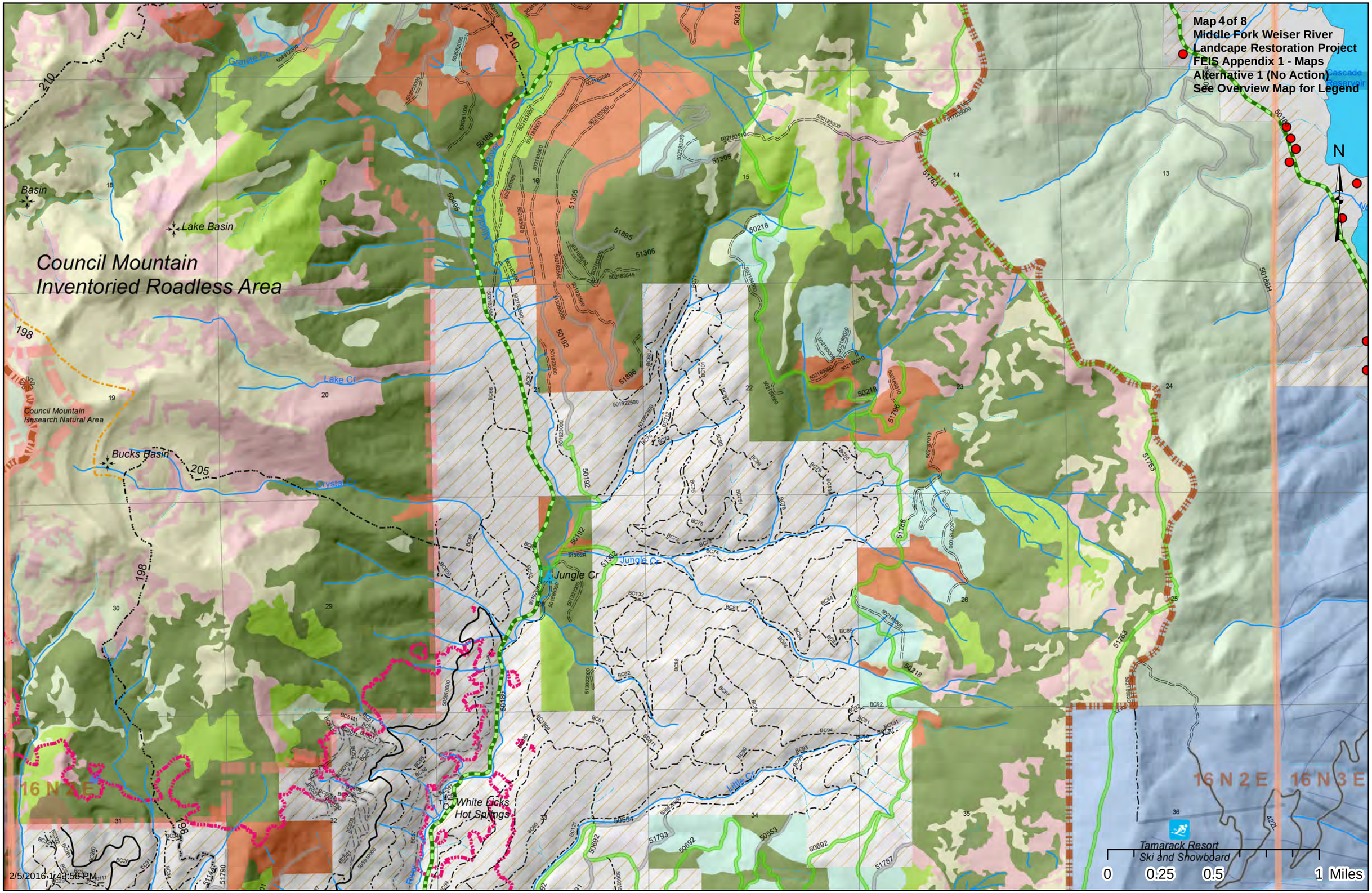
Map 4 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 1 (No Action)
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N
Council Mountain
Inventoried Roadless Area
Council Mountain
Research Natural Area
Basin
Lake Basin
Bucks Basin
Granite Cr
Lake Cr
Crystal Cr
Jungle Cr
Little Cr
Cascade Reservoir
White Licks
Hot Springs
Tamarack Resort
Ski and Snowboard
16 N 2 E
16 N 3 E
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0.25
0.5
1 Miles
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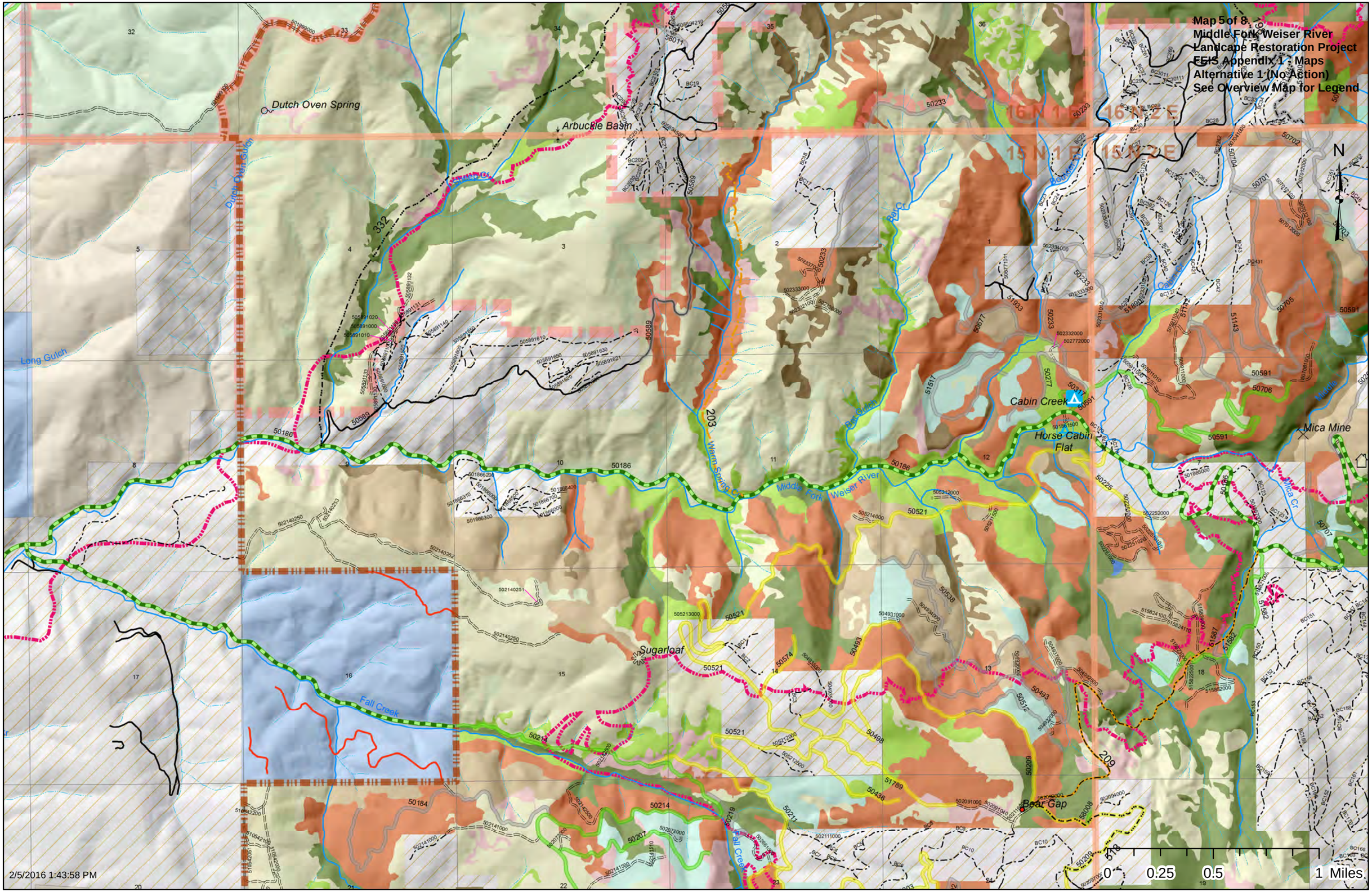
Map 5 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 : Maps
Alternative 1 (No Action)
See Overview Map for Legend
Dutch Oven Spring
Arbuckle Basin
Dutch Oven Gulch
Long Gulch
Cabin Creek
Horse Cabin Flat
Mica Mine
Middle Fork Weiser River
Warm Spring Cr
Fall Creek
Sugarloaf
Bear Gap
Mica Cr
Muddle
Cabin Cr
Bear Creek
Bear Cr
16 N 1 E
16 N 2 E
15 N 1 E
15 N 2 E
N
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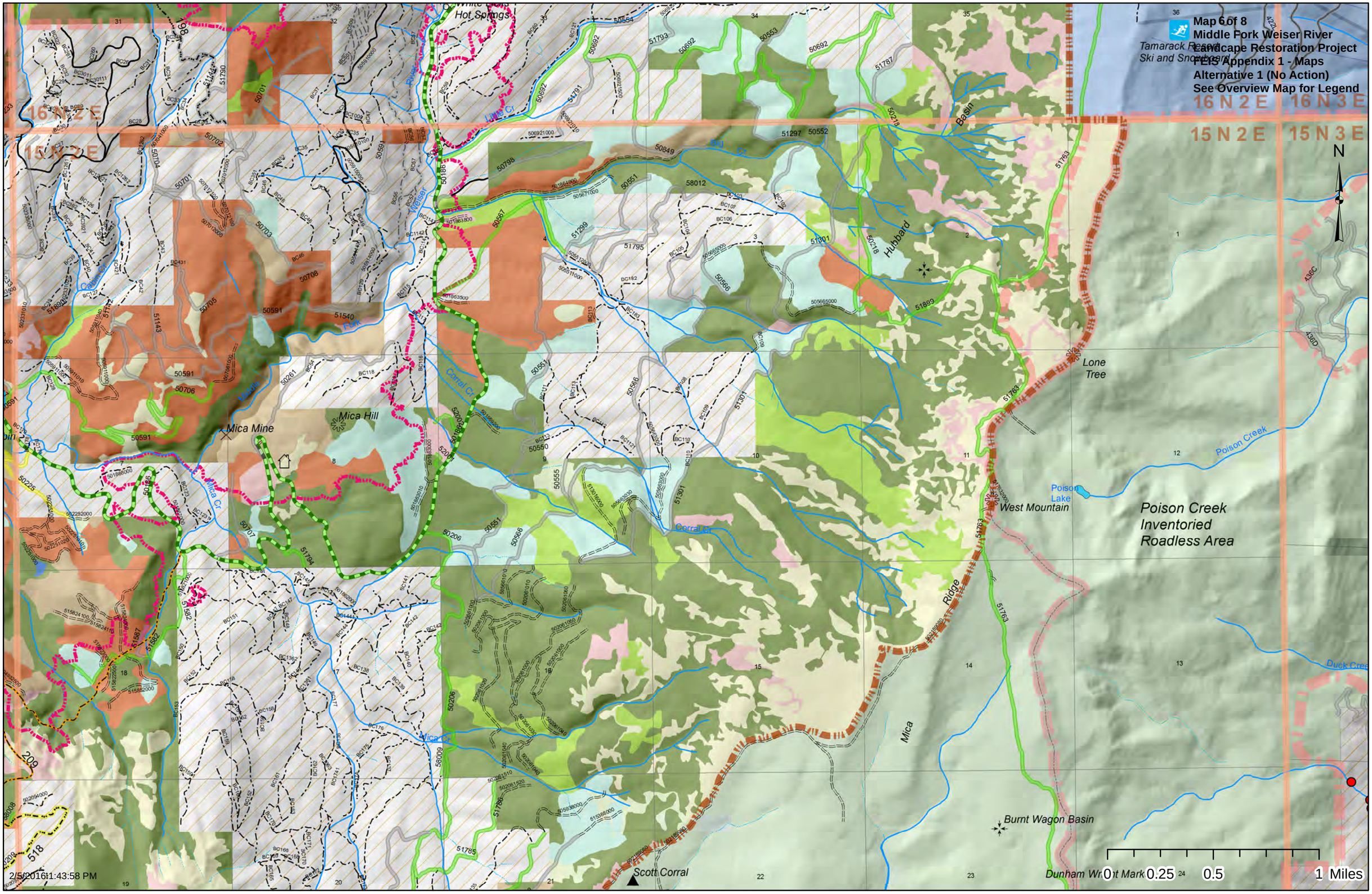
Map 6 of 8
Middle Fork Weiser River
Landscape Restoration Project
FEIS Appendix 1 - Maps
Alternative 1 (No Action)
See Overview Map for Legend
Hot Springs
Tamarack Resort
Ski and Snowboard
16 N 2 E
16 N 3 E
15 N 2 E
15 N 3 E
N
Hubbard
Basin
Lone
Tree
Mica Mine
Mica Hill
Poison Creek
Poison
Lake
West Mountain
Poison Creek
Inventoried
Roadless Area
Ridge
Mica
Burnt Wagon Basin
Scott Corral
Dunham Wr
Mark
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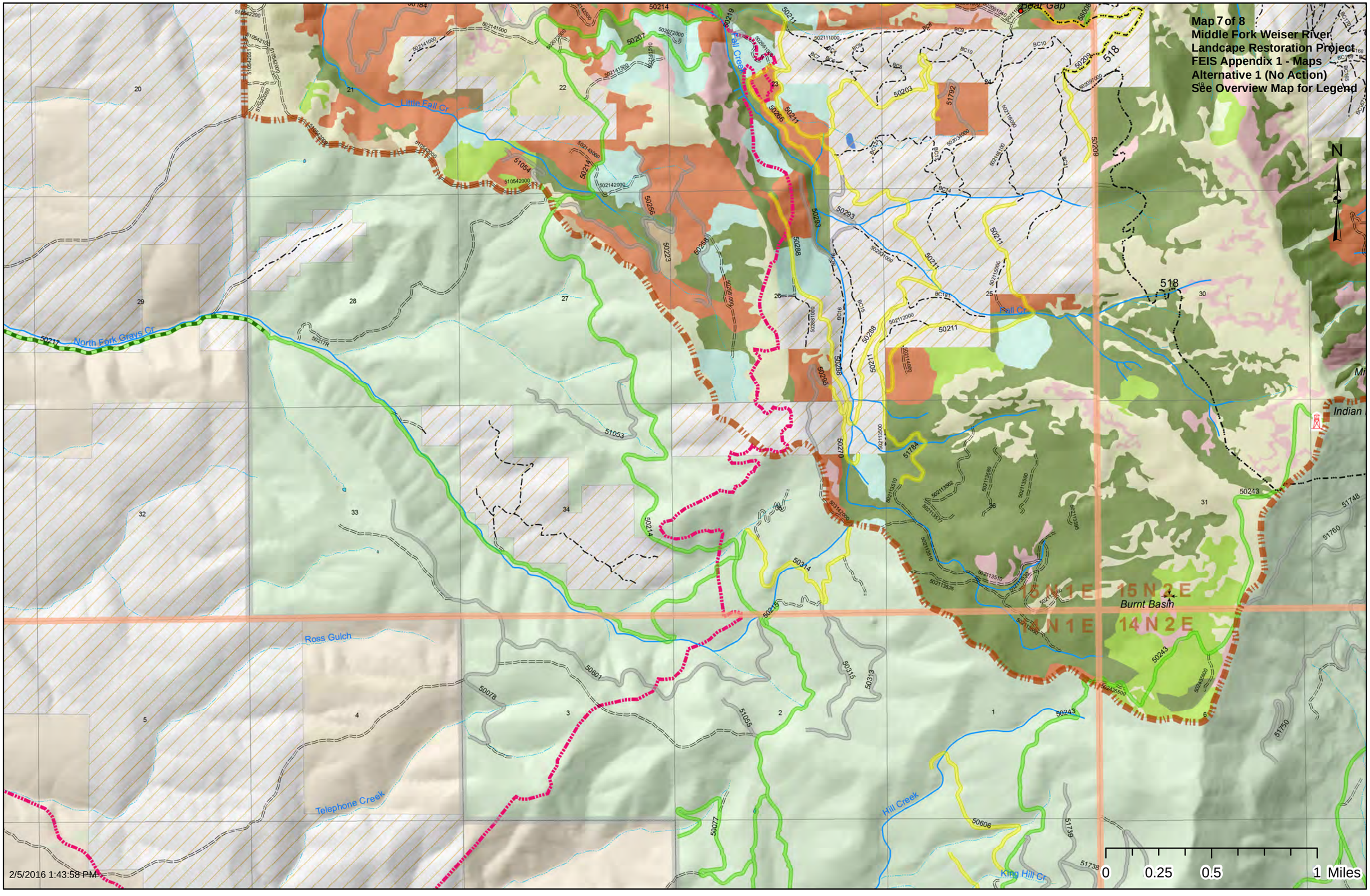
Map 7 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 1 (No Action)
See Overview Map for Legend
N
Bear Gap
Little Fall Cr
Fall Creek
North Fork Grays Cr
Ross Gulch
Telephone Creek
Hill Creek
King Hill Cr
Indian
Burnt Basin
15 N 1 E
15 N 2 E
14 N 1 E
14 N 2 E
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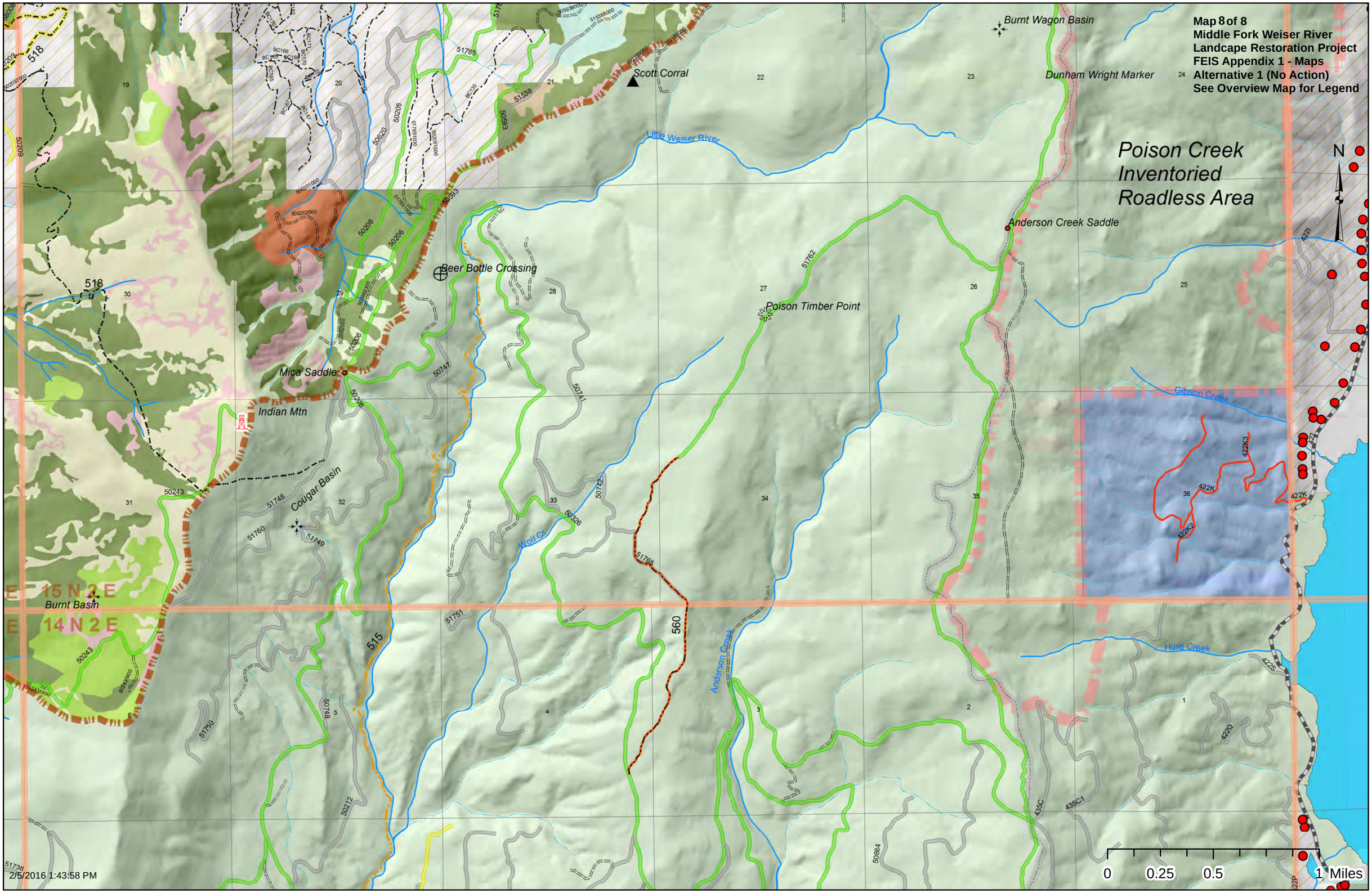
Map 8 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 1 (No Action)
See Overview Map for Legend
Poison Creek
Inventoried
Roadless Area
N
Burnt Wagon Basin
Dunham Wright Marker
Scott Corral
Little Weiser River
Anderson Creek Saddle
Beer Bottle Crossing
Poison Timber Point
Mica Saddle
Indian Mtn
Cougar Basin
Burnt Basin
Wolf Cr
Anderson Creek
Gibson Creek
Hurd Creek
15 N 2 E
14 N 2 E
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1 Miles
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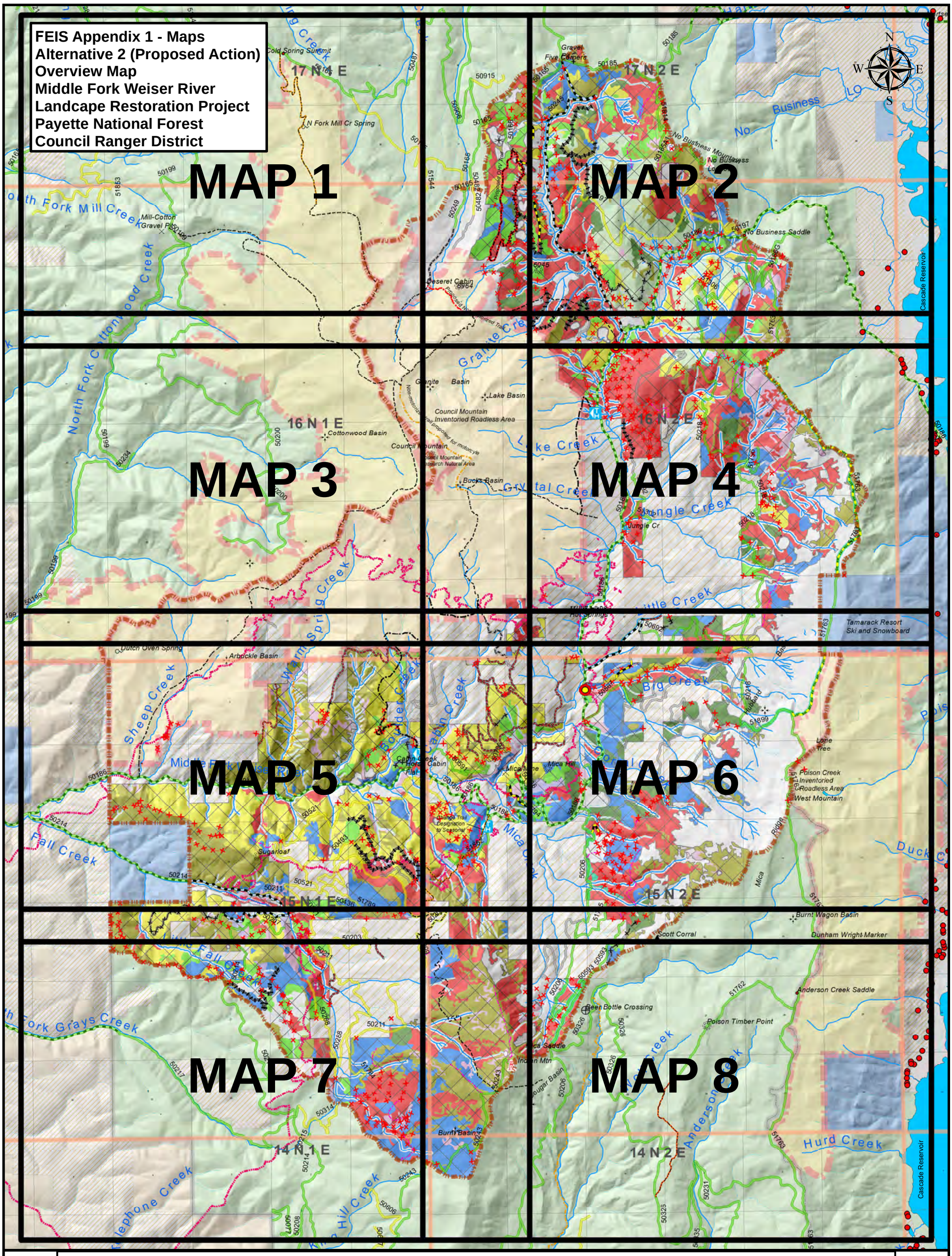
FEIS Appendix 1 - Maps
Alternative 2 (Proposed Action)
Overview Map
Middle Fork Weiser River
Landcape Restoration Project
Payette National Forest
Council Ranger District



Legend

Road Type
- C - COUNTY, PARISH, BOROUGH
- NFSR - NATIONAL FOREST SYSTEM ROAD
- STATE

Displayed On Individual Maps
- UNAUTHORIZED
- P - PRIVATE
- PVT - UNDETERMINED

Alternative 2 Road Status
- CLOSED
- OPEN
- SEASONAL

Existing Trails
- ATV
- OHV
- Motorcycle
- Non-motorized

Proposed Vegetation Treatments
- Non-Commercial Thin
- Burned Areas/Plantations
- Commercial Thin-Free Thin
- Free Thin–Patch Cut-Modified Shelterwood
- Commercial Thin / Mature Plantations
- Conifer Removal in Aspen Stands
- Vegetation treatments in stands with Low Site Quality
- Non-Forested Treatment
- Wet Meadow Treatment
- Shaded Fuelbreak
- Fuel Reduction within an RCA
- Prescribed Burn Preparation Only
- Proposed Prescribed Burn Treatments

Proposed Road Treatments
- Long-Term Closure
- Implement BMPs
- Reconstruction
- Operational Maintenance Level 1 to 2
- Convert to Trail
- Road Realignment
- Decommission
- New Temporary Road
- Proposed Culvert Replacements
- Proposed Trailheads

Proposed Trails
- Proposed Non-motorized
- Proposed Reroute 198
- Proposed Reroute 205
- Proposed OHV

Streams
- Intermittent
- Perennial
- Lakes

Geographic Points
- basin
- cabin
- camp
- campground
- corral
- crossing
- flat
- gap
- gravel pit
- guard station
- hot spring
- lookout
- mine
- radio tower
- spring
- summit
- Project Area
- Payette National Forest
- Grays Creek Fire
- Inventoried Roadless Areas

Ownership
- BLM
- USFS
- Private Land
- State of Idaho
- Valley Co. Improved Values

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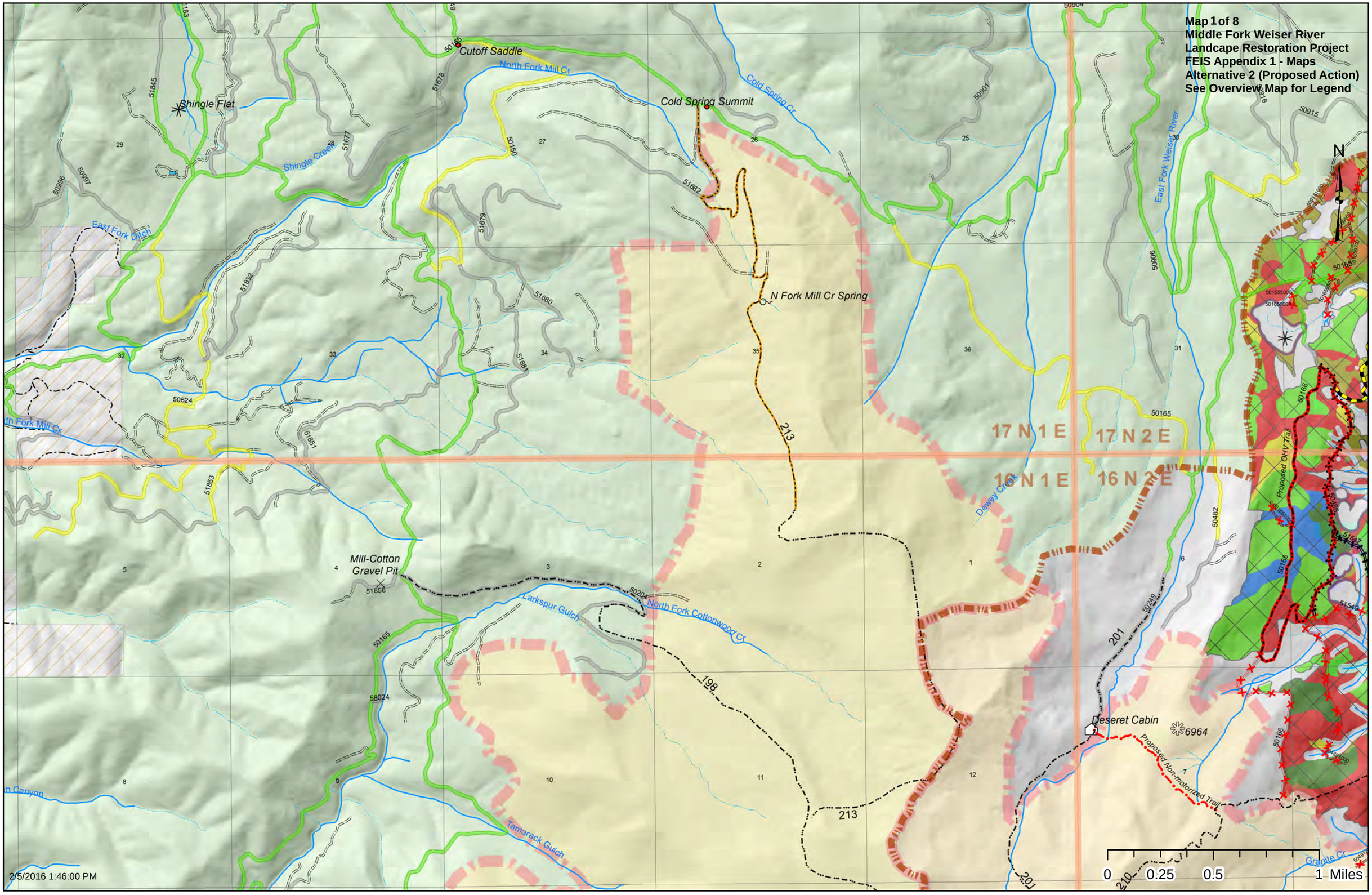
Map 1 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 2 (Proposed Action)
See Overview Map for Legend
Cutoff Saddle
North Fork Mill Cr
Cold Spring Summit
Cold Spring Cr
Shingle Flat
Shingle Creek
East Fork Weiser River
East Fork Ditch
N Fork Mill Cr Spring
17 N 1 E
17 N 2 E
16 N 1 E
16 N 2 E
Proposed OHV Trail
Dawey Creek
Mill-Cotton Gravel Pit
Larkspur Gulch
North Fork Cottonwood Cr
Deseret Cabin
6964
Proposed Non-motorized Trail
Tamarack Gulch
Granite Cr
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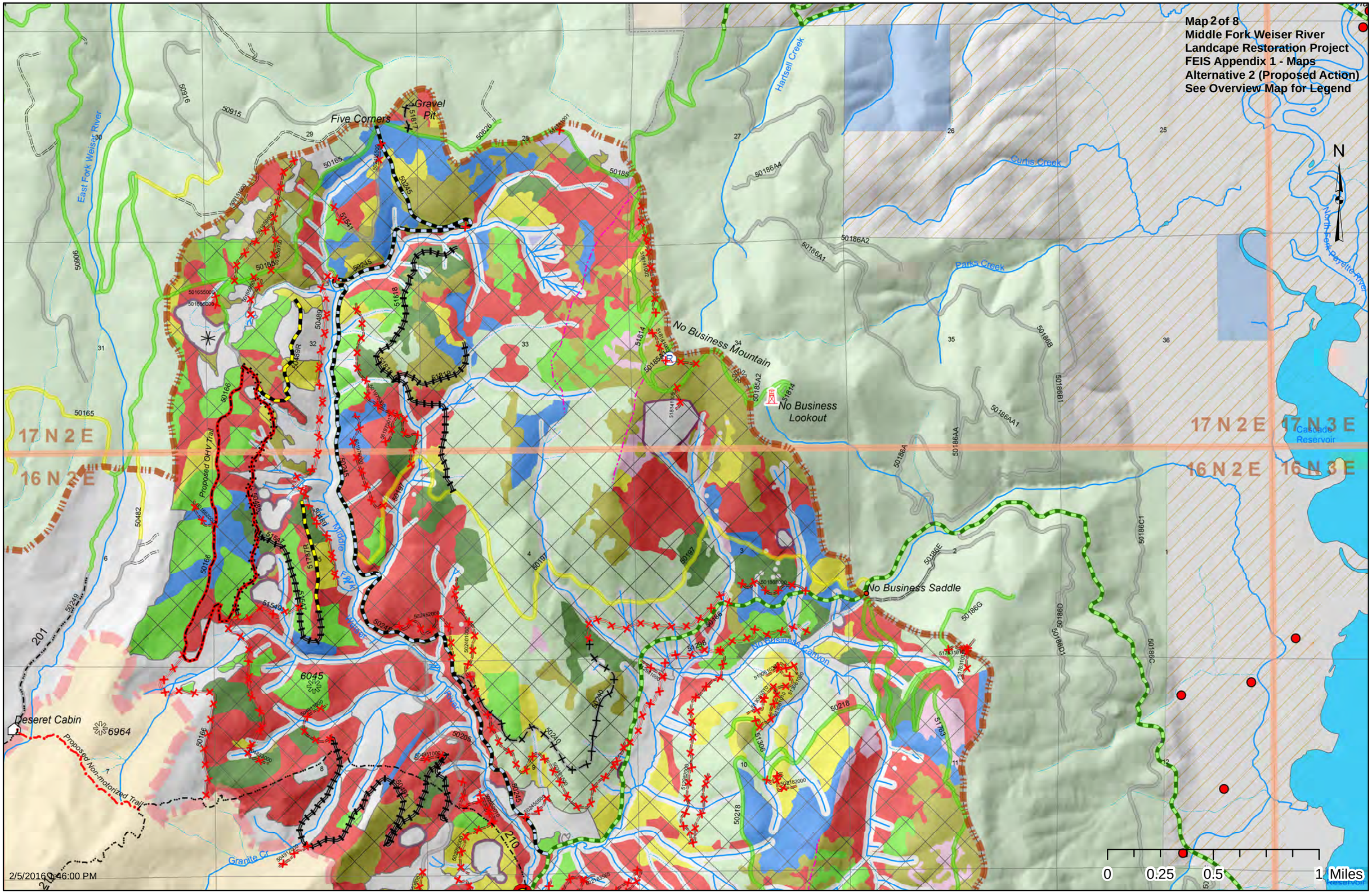
Map 2 of 8
Middle Fork Weiser River
Landcape Restoration Project
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Alternative 2 (Proposed Action)
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N
Five Corners
Gravel Pit
East Fork Weiser River
Hartsell Creek
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North Fork Payette River
No Business Mountain
No Business Lookout
No Business Saddle
No Business Canyon
Middle Fork
Proposed OHV Trail
Proposed Non-motorized Trail
Deseret Cabin
6964
6045
Granite Cr
Cascade Reservoir
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16 N 2 E
17 N 3 E
16 N 3 E
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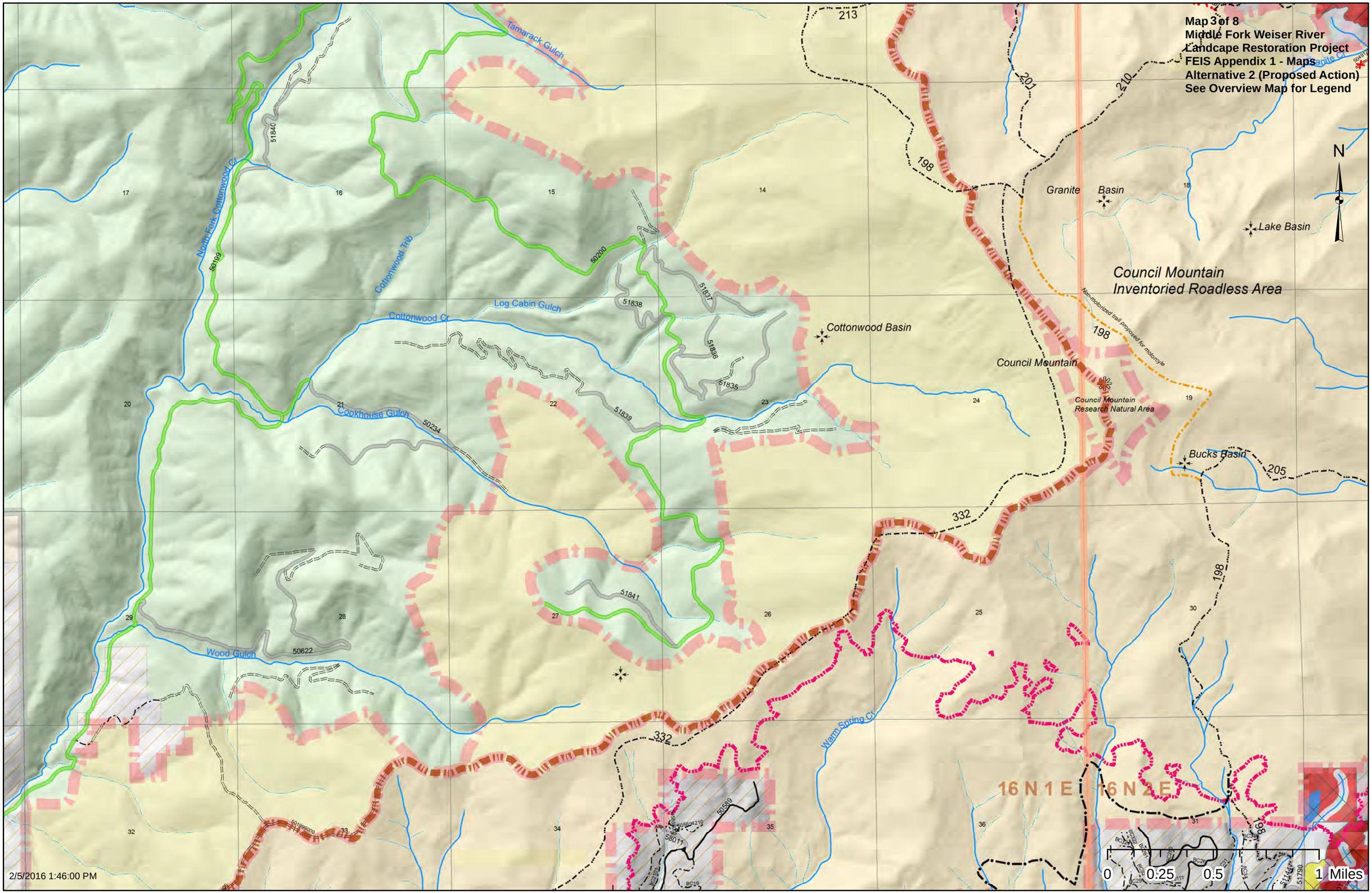
Map 3 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 2 (Proposed Action)
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N
Tamarack Gulch
North Fork Cottonwood Cr
Cottonwood Trib
Cottonwood Cr
Log Cabin Gulch
Cookhouse Gulch
Wood Gulch
Warm Spring Cr
Granite Cr
Granite Basin
Lake Basin
Cottonwood Basin
Council Mountain
Council Mountain Inventoried Roadless Area
Non-motorized trail proposed for motorcycle
Council Mountain Research Natural Area
Bucks Basin
16 N 1 E
16 N 2 E
213
201
210
198
332
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51840
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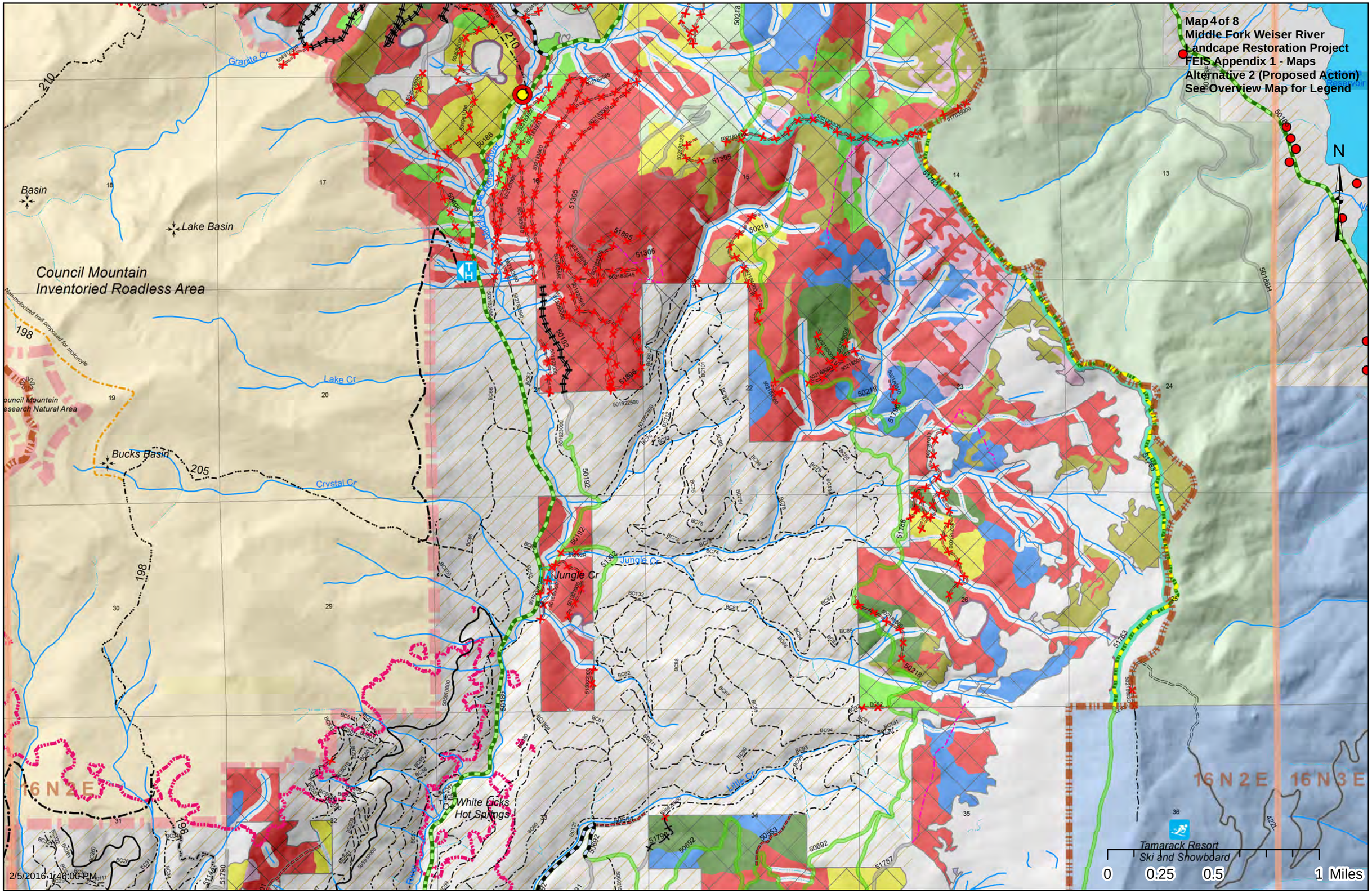
Map 4 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 2 (Proposed Action)
See Overview Map for Legend
N
Granite Cr
Basin
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16 N 3 E
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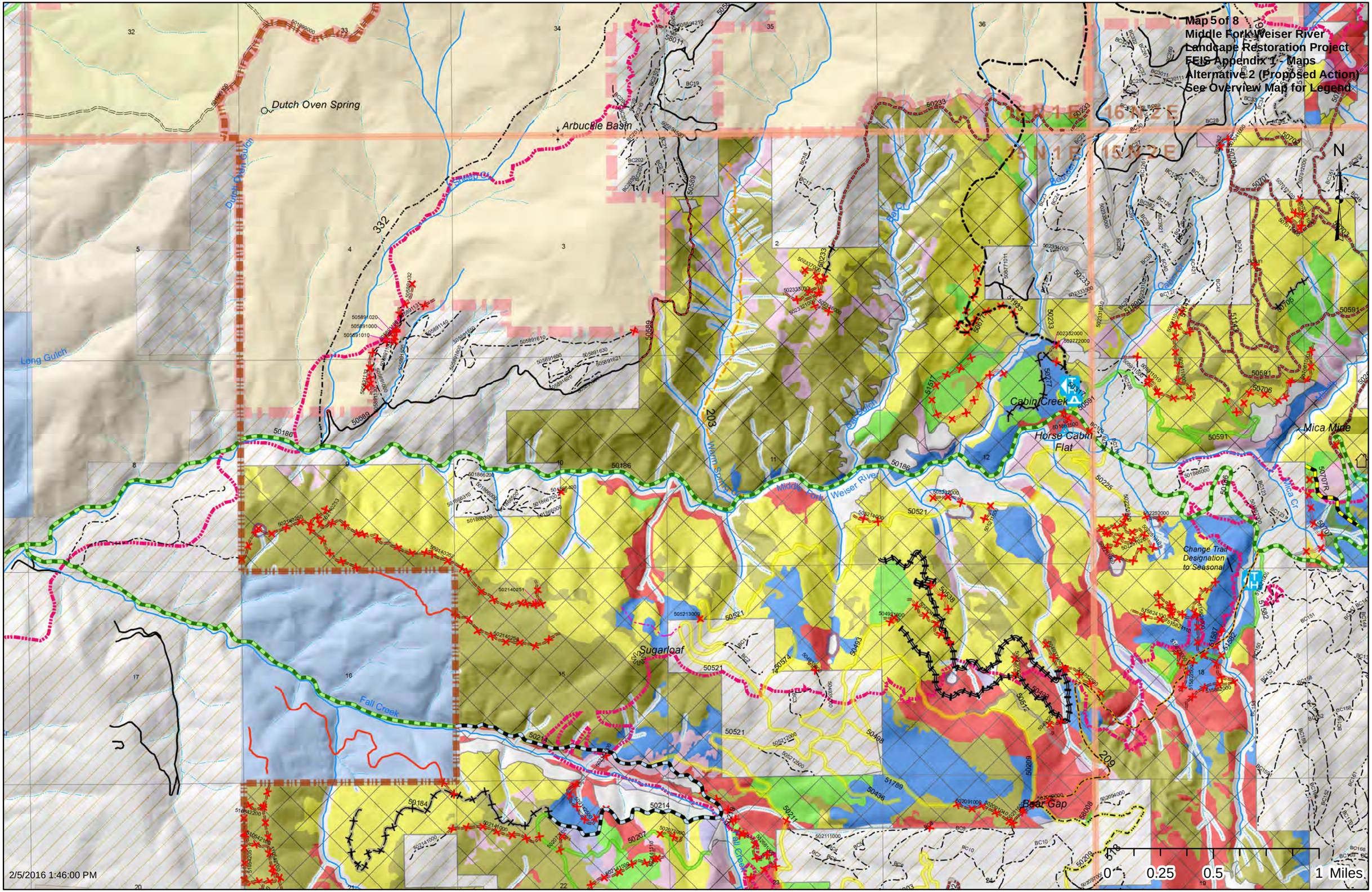
Map 5 of 8
Middle Fork Weiser River
Landscape Restoration Project
FEIS Appendix 1 - Maps
Alternative 2 (Proposed Action)
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Dutch Oven Spring
Arbuckle Basin
Long Gulch
Dutch Oven Gulch
Sheep Cr
Warm Springs Cr
Middle Fork Weiser River
Cabin Creek
Horse Cabin Flat
Mica Mine
Mica Cr
Change Trail Designation to Seasonal
Sugarloaf
Fall Creek
Bear Gap
Rock Cr
Cabin Cr
Rabbit Ck
Fall Creek
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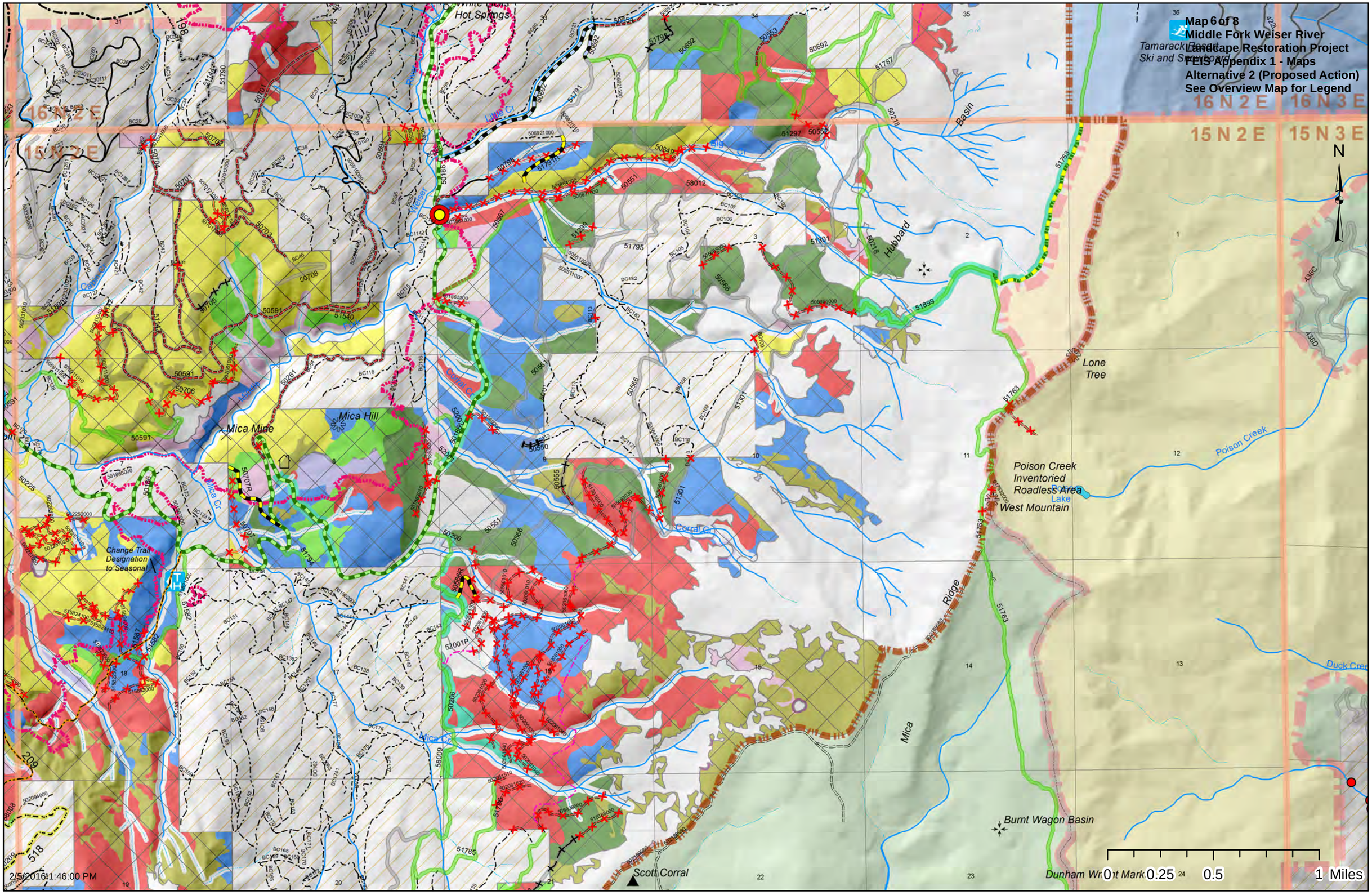
Map 6 of 8
Middle Fork Weiser River
Landscape Restoration Project
FEIS Appendix 1 - Maps
Alternative 2 (Proposed Action)
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Hot Springs
Tamarack Resort
Ski and Snowboard
16 N 2 E
16 N 3 E
15 N 2 E
15 N 3 E
N
Little Cr
Big Cr
Weiser
Hubbard
Basin
Lone
Tree
Mica Hill
Mica Mine
Mica Cr
Change Trail
Designation
to Seasonal
Poison Creek
Inventoried
Roadless Area
Lake
West Mountain
Poison Creek
Corral Cr
Mica
Ridge
Burnt Wagon Basin
Scott Corral
Dunham Wr
Duck Cree
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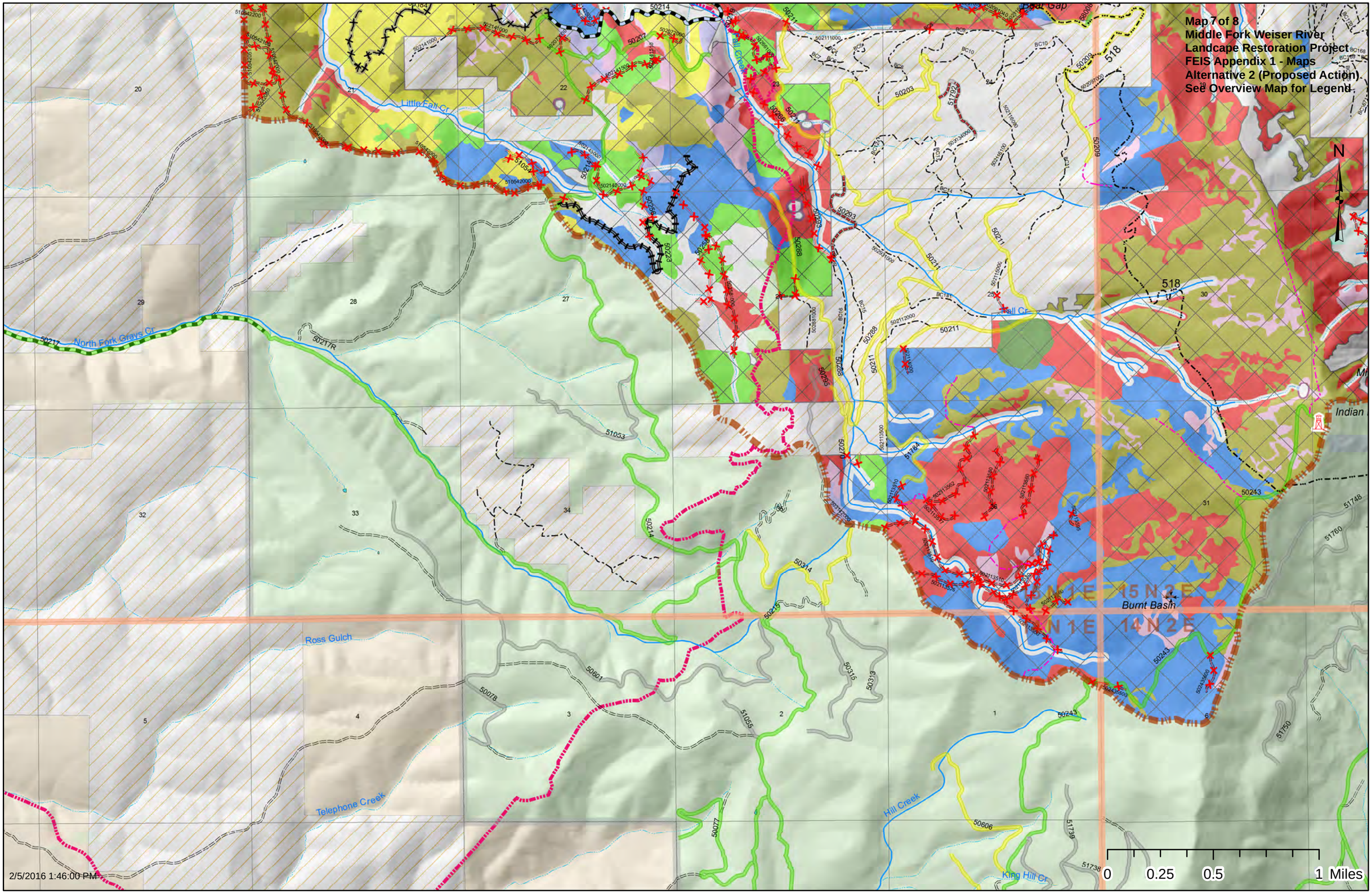
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Middle Fork Weiser River
Landcape Restoration Project
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N
Little Fall Cr
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15 N 2E
14 N 1E
14 N 2E
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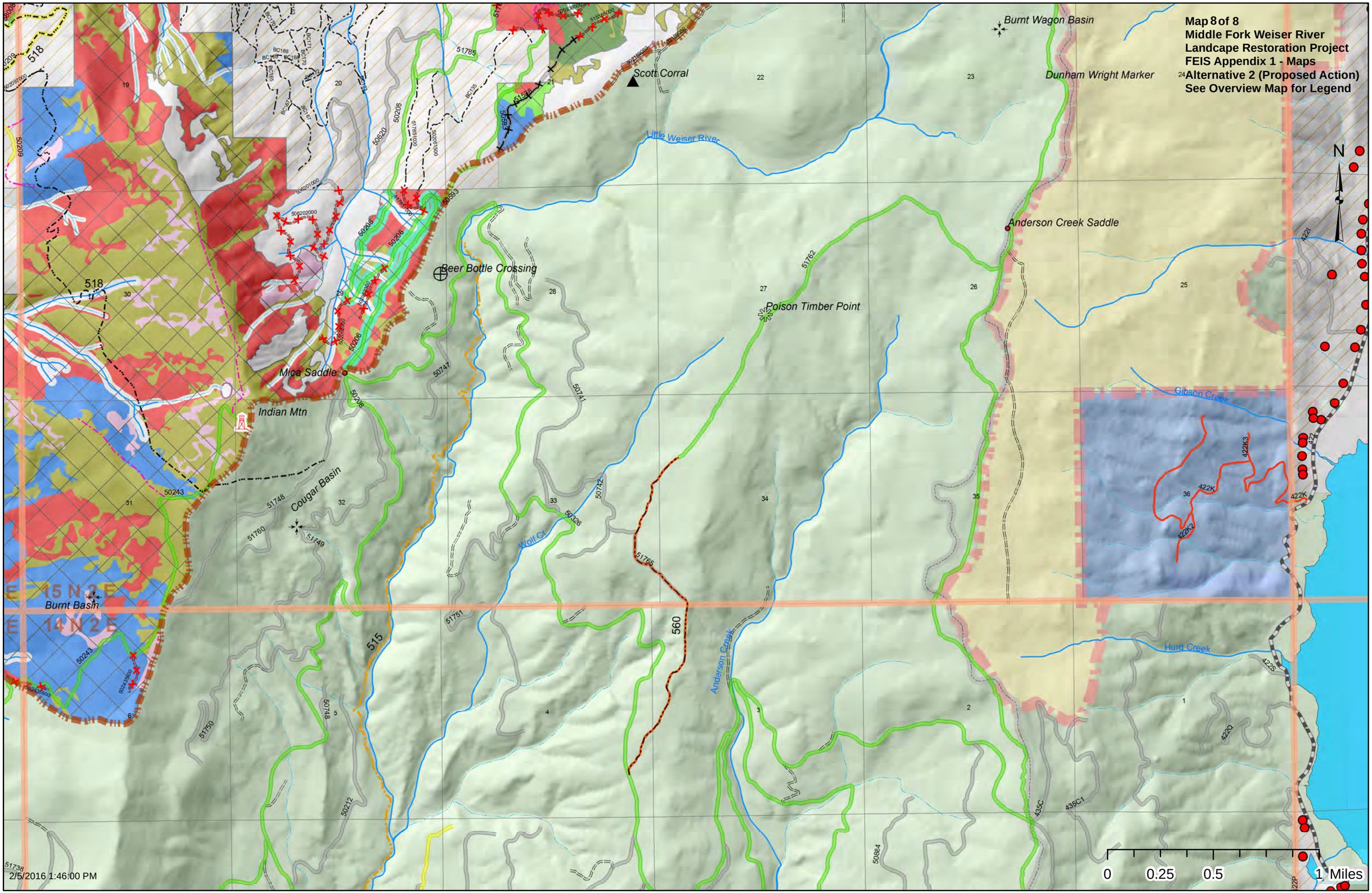
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Landcape Restoration Project
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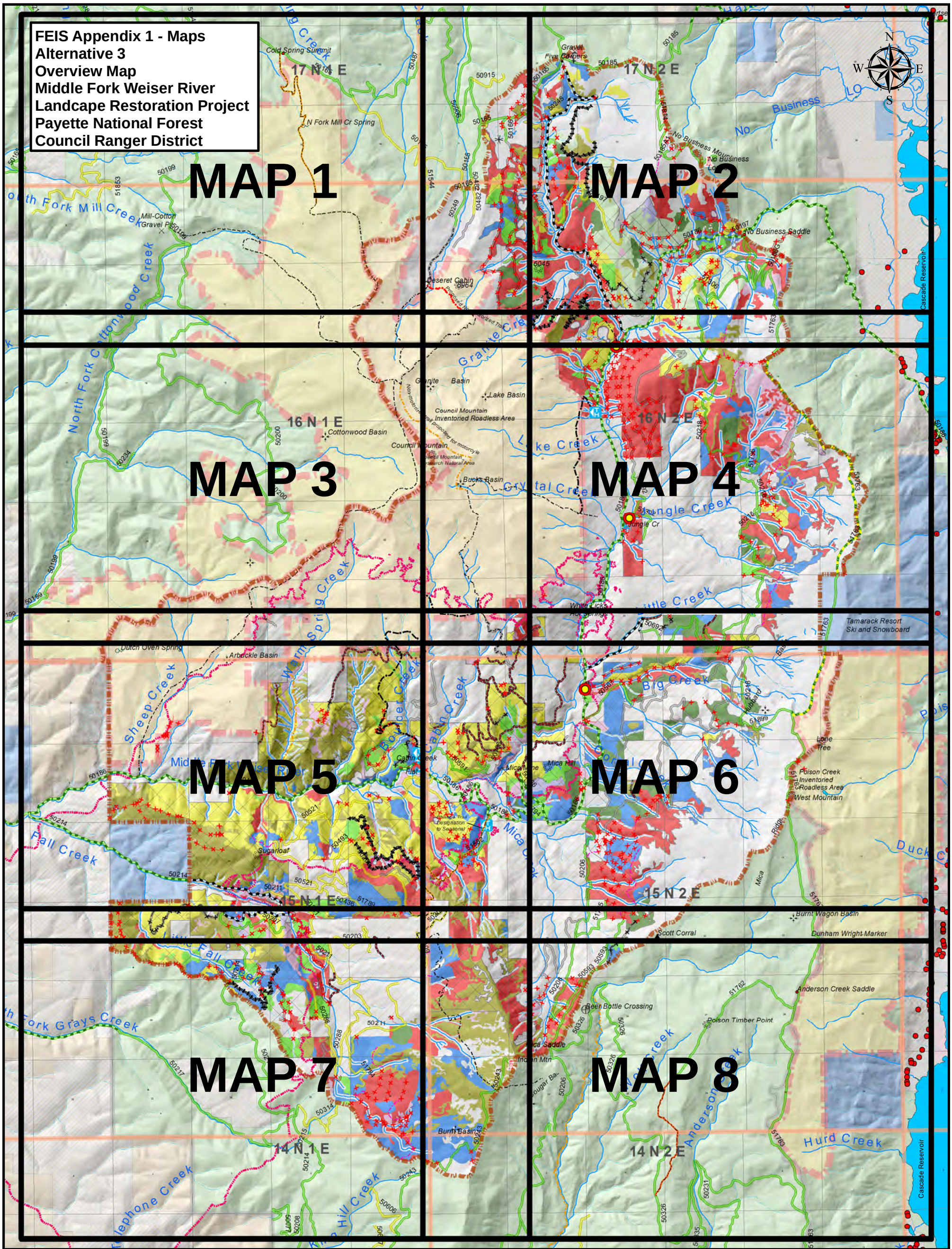
Mica Saddle
Indian Mtn
Cougar Basin
Burnt Basin
Wolf Cr
Anderson Creek
Gibson Creek
Hurd Creek
N
0
0.25
0.5
1 Miles
2/5/2016 1:46:00 PM

FEIS Appendix 1 - Maps
Alternative 3
Overview Map
Middle Fork Weiser River
Landcape Restoration Project
Payette National Forest
Council Ranger District



Legend

Road Type
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- New Temporary Road
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Proposed Trails
- Proposed Non-motorized
- Proposed Reroute 198
- Proposed Reroute 205

Streams
- Intermittent
- Perennial
- Lakes

Geographic Points
- basin
- cabin
- camp
- campground
- corral
- crossing
- flat
- gap
- gravel pit
- guard station
- hot spring
- lookout
- mine
- radio tower
- spring
- summit

- Project Area
- Payette National Forest
- Grays Creek Fire
- Inventoried Roadless Areas

Ownership
- BLM
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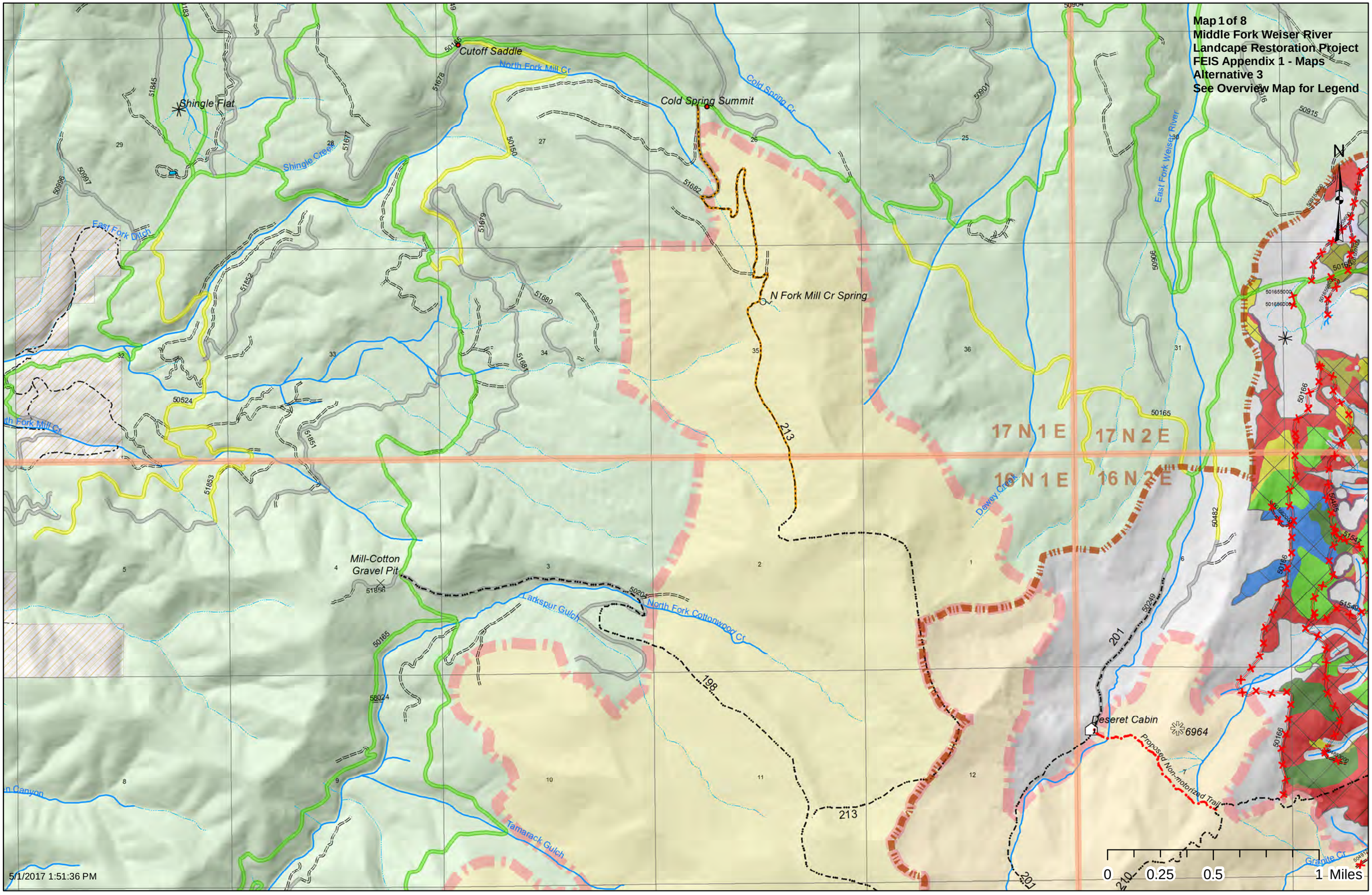
- Private Land
- State of Idaho
- Valley Co. Improved Values


Map 1 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 3
See Overview Map for Legend
Cutoff Saddle
North Fork Mill Cr
Cold Spring Summit
Cold Spring Cr
Shingle Flat
Shingle Creek
East Fork Ditch
East Fork Weiser River
N Fork Mill Cr Spring
17 N 1 E
17 N 2 E
16 N 1 E
16 N 2 E
Dewey Creek
Mill-Cotton
Gravel Pit
Larkspur Gulch
North Fork Cottonwood Cr
Deseret Cabin
6964
Proposed Non-motorized Trail
Tamarack Gulch
Granite Cr
N
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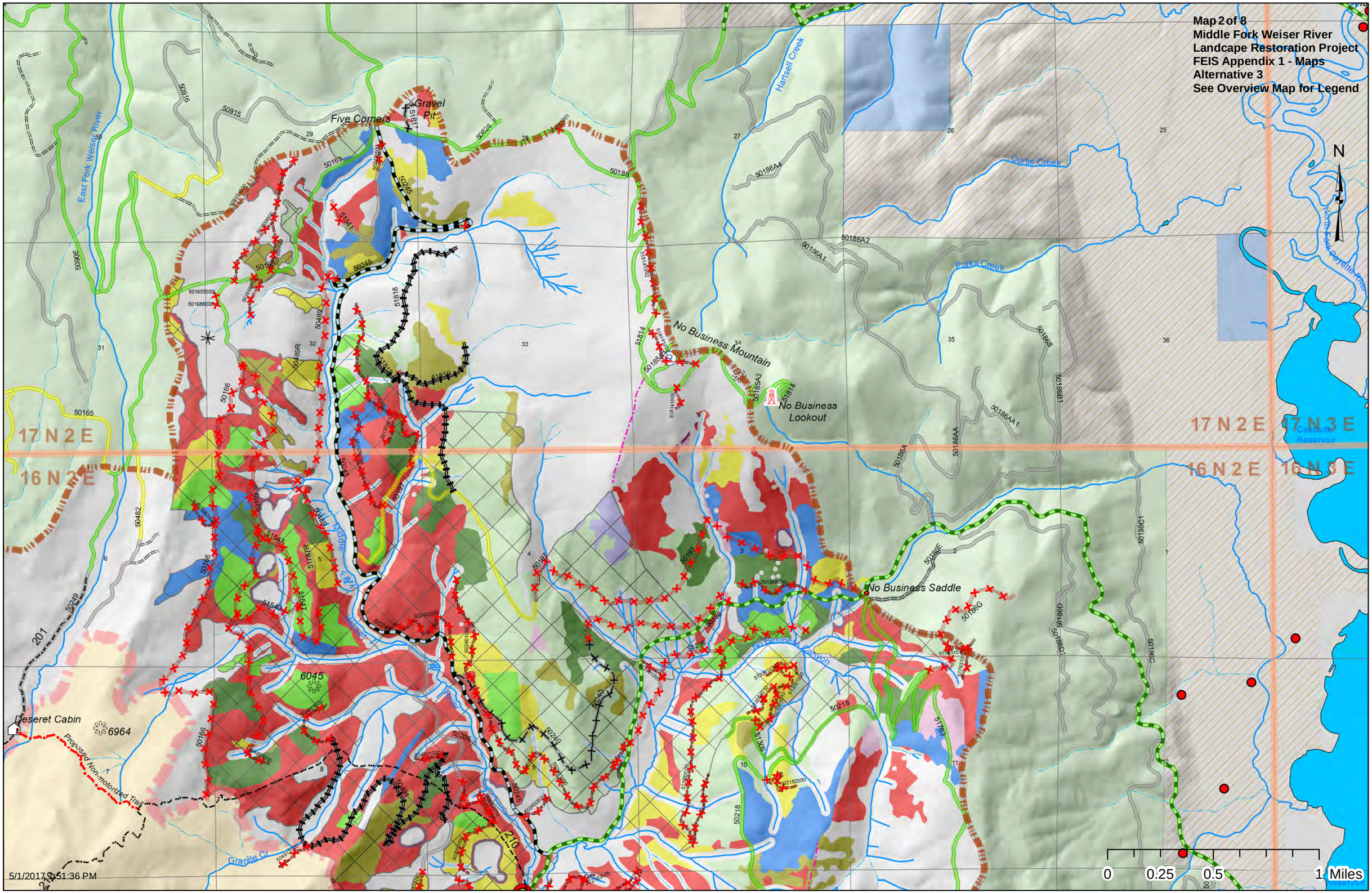
Map 2 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 3
See Overview Map for Legend
N
Five Corners
Gravel Pit
East Fork Weiser River
Hartsell Creek
Curtis Creek
Parks Creek
North Fork Payette River
Cascade Reservoir
No Business Mountain
No Business Lookout
No Business Saddle
No Business Canyon
Middle Fork
Deseret Cabin
6964
6045
Proposed Non-motorized Trail
Granite Cr
17 N 2 E
17 N 3 E
16 N 2 E
16 N 3 E
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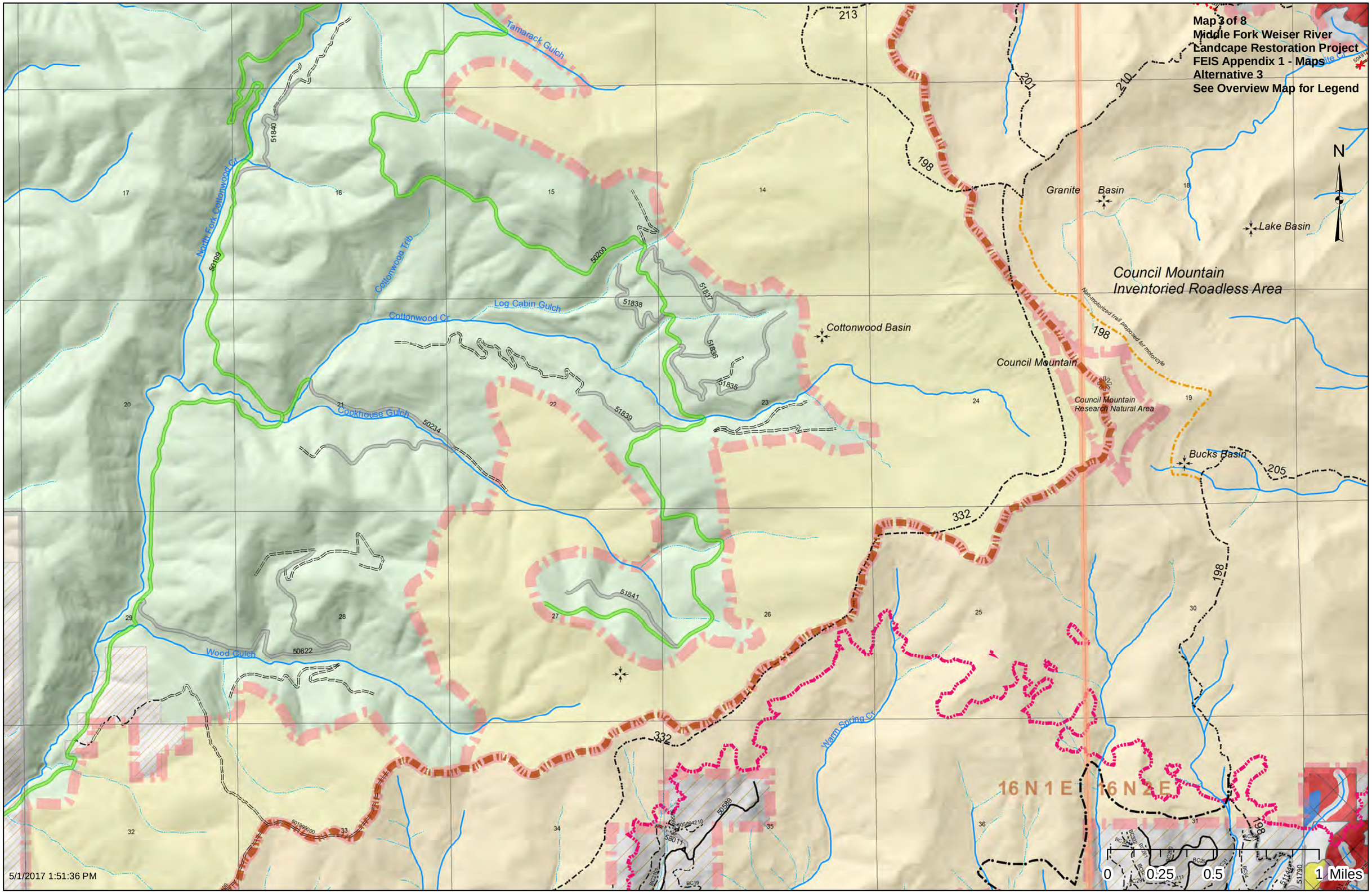
Map 3 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 3
See Overview Map for Legend
N
Tamarack Gulch
North Fork Cottonwood Cr
Cottonwood Trib
Cottonwood Cr
Log Cabin Gulch
Cockhouse Gulch
Wood Gulch
Warm Spring Cr
Granite Basin
Lake Basin
Council Mountain
Inventoried Roadless Area
Cottonwood Basin
Council Mountain
Non-motorized trail proposed for motorcyle
Council Mountain
Research Natural Area
Bucks Basin
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16 N 2 E
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0.25
0.5
1 Miles
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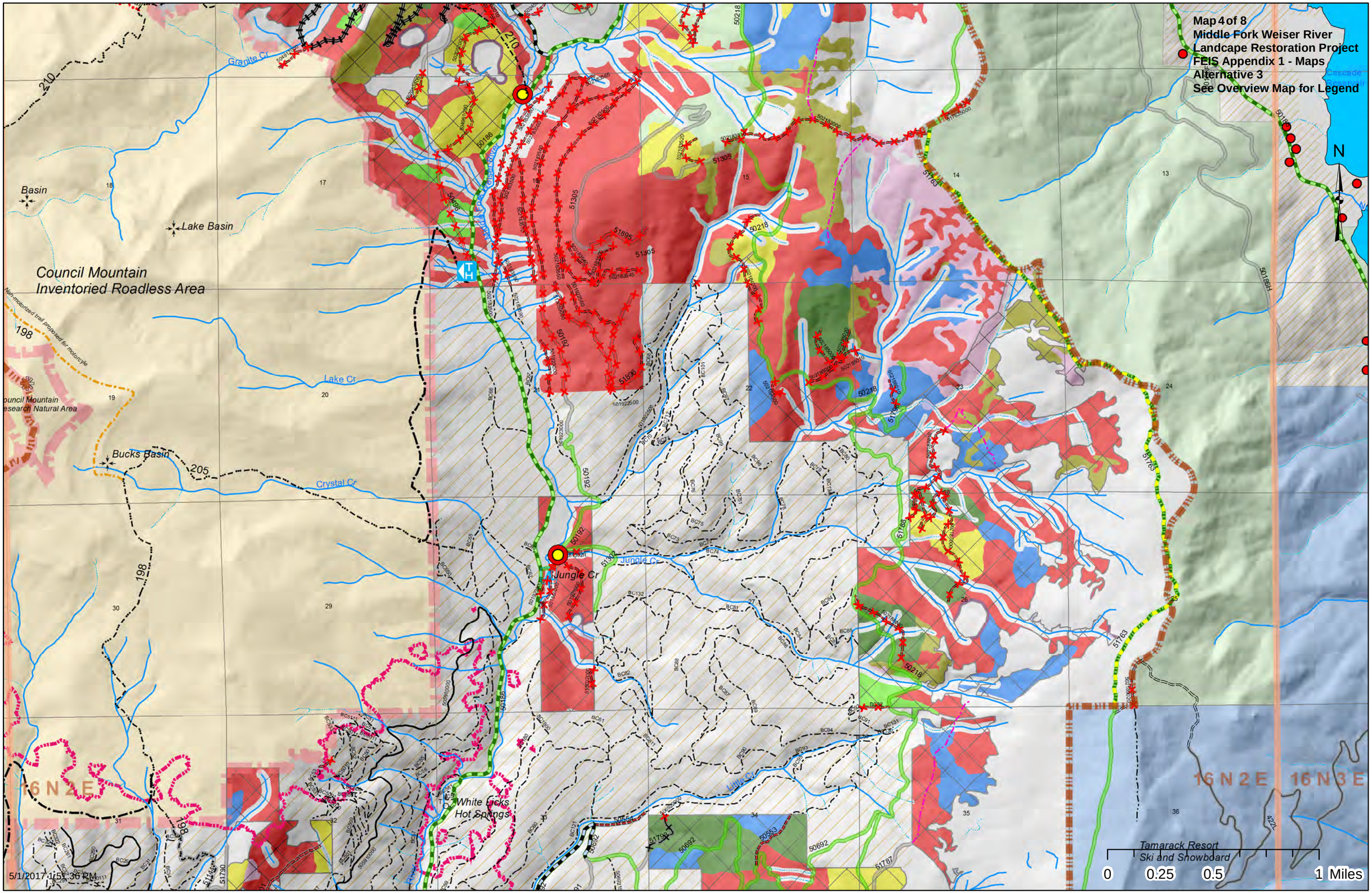
Map 4 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 3
See Overview Map for Legend
N
Granite Cr
Basin
Lake Basin
Council Mountain
Inventoried Roadless Area
Non-motorized trail proposed for motorcycle
Council Mountain
Research Natural Area
Lake Cr
Bucks Basin
Crystal Cr
Jungle Cr
Little Cr
White Licks
Hot Springs
Tamarack Resort
Ski and Snowboard
6 N 2 E
16 N 2 E
16 N 3 E
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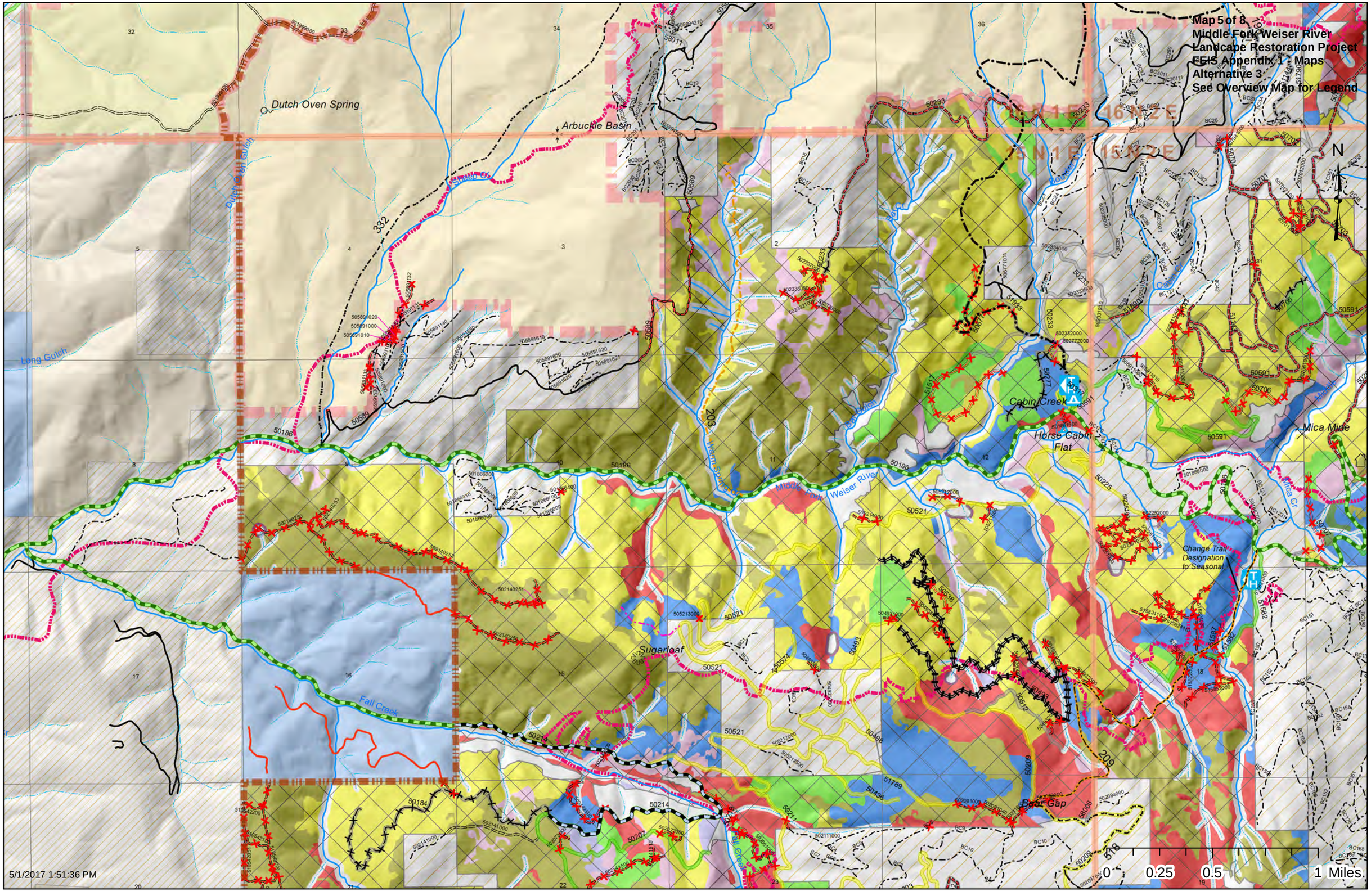
Map 5 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 3
See Overview Map for Legend
Dutch Oven Spring
Arbuckle Basin
Dutch Oven Gulch
Long Gulch
Cabin Creek
Horse Cabin Flat
Mica Mine
Mica Cr
Warm Springs
Middle Fork Weiser River
Change Trail Designation to Seasonal
Sugarloaf
Fall Creek
Bear Gap
N
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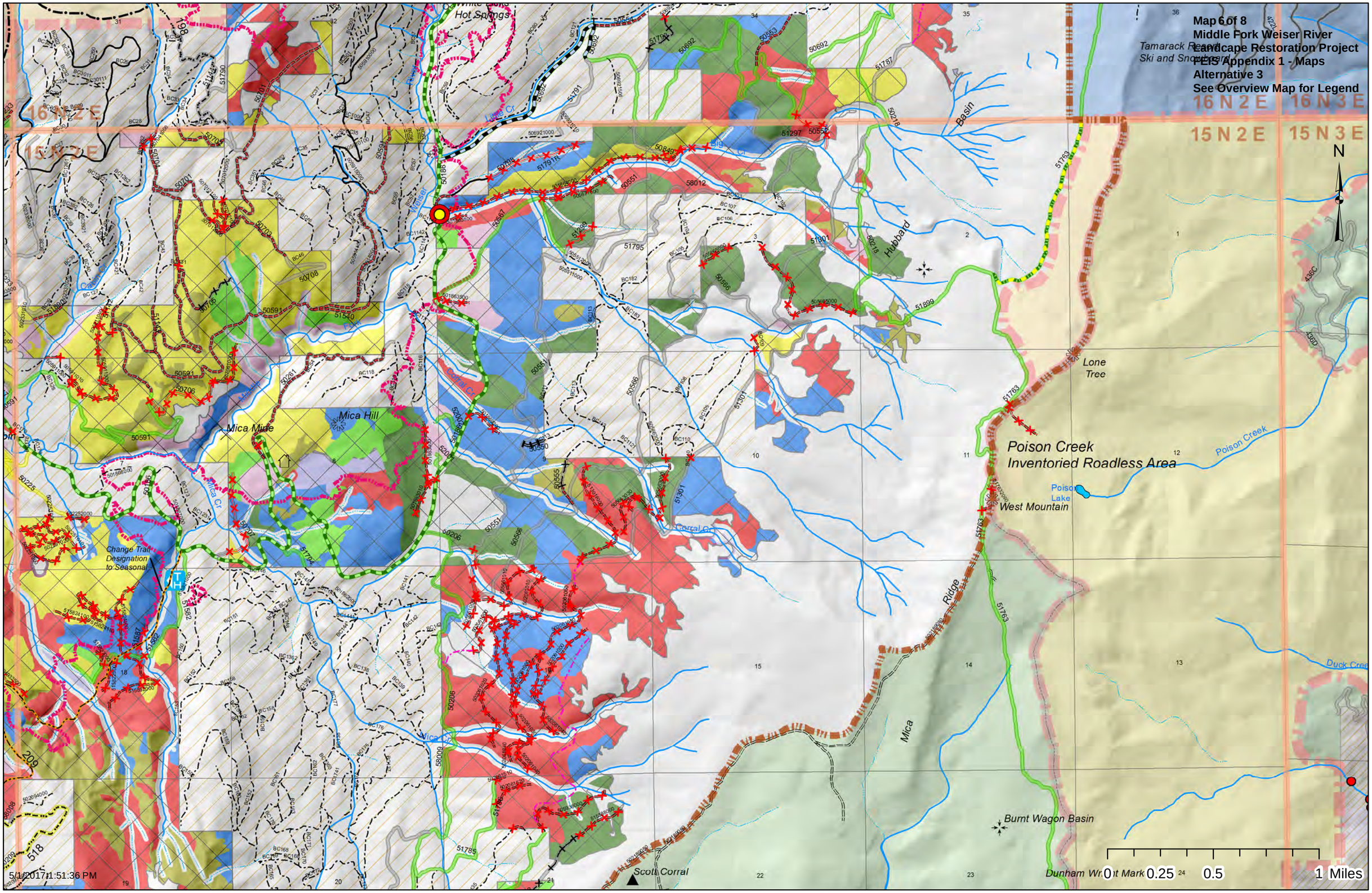
Map 6 of 8
Middle Fork Weiser River
Landscape Restoration Project
FEIS Appendix 1 - Maps
Alternative 3
See Overview Map for Legend
16 N 2 E
16 N 3 E
15 N 2 E
15 N 3 E
N
Hot Springs
Tamarack Resort
Ski and Snowboard
Basin
Hubbard
Lone
Tree
Poison Creek
Inventoried Roadless Area
Poison Creek
Poison
Lake
West Mountain
Mica Hill
Mica Mine
Mica Cr.
Change Trail
Designation
to Seasonal
Ridge
Mica
Burnt Wagon Basin
Scott Corral
Dunham Wr.
Duck Cree
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0.5
1 Miles
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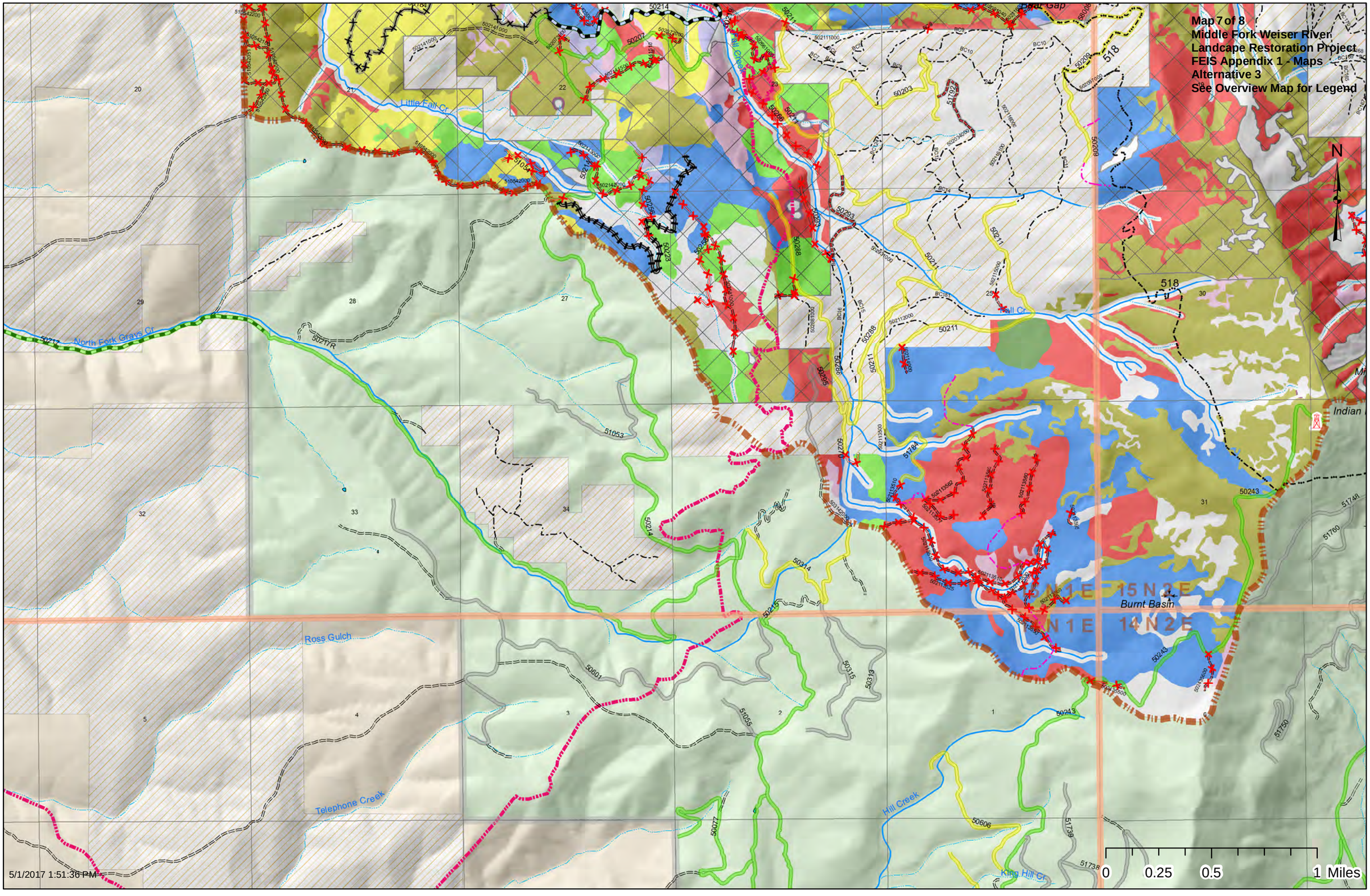
Map 7 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 3
See Overview Map for Legend
N
Little Fall Cr
North Fork Grays Cr
Fall Cr
Ross Gulch
Telephone Creek
Hill Creek
King Hill Cr
Burnt Basin
Indian
14N1E
15N1E
14N2E
15N2E
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1 Miles
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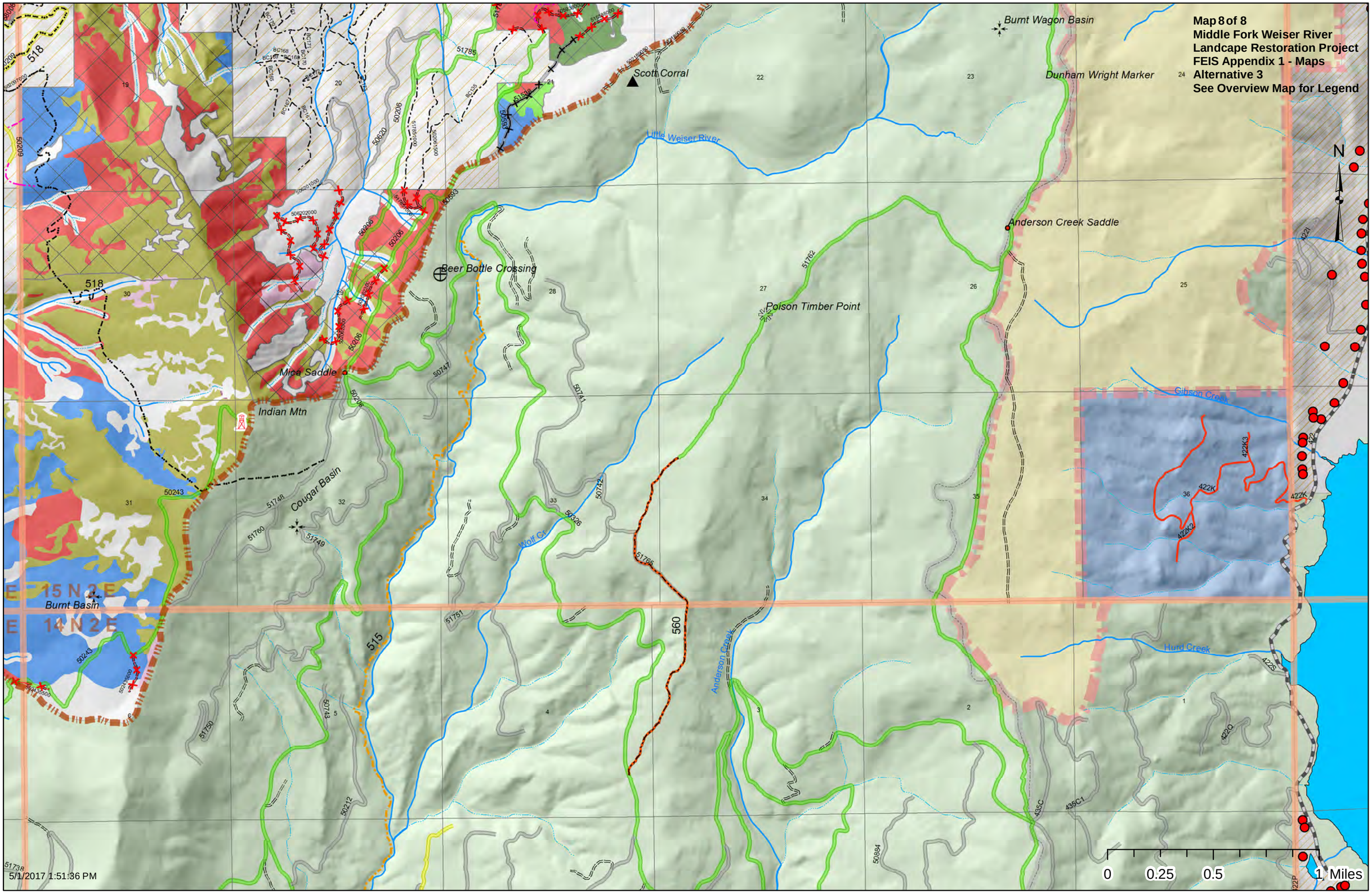
Map 8 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 3
See Overview Map for Legend
Burnt Wagon Basin
Dunham Wright Marker
Scott Corral
Little Weiser River
Anderson Creek Saddle
Beer Bottle Crossing
Poison Timber Point
Mica Saddle
Indian Mtn
Cougar Basin
Burnt Basin
Wolf Cr
Anderson Creek
Gibson Creek
Hurd Creek
E 15 N 2 E
E 14 N 2 E
N
0
0.25
0.5
1 Miles
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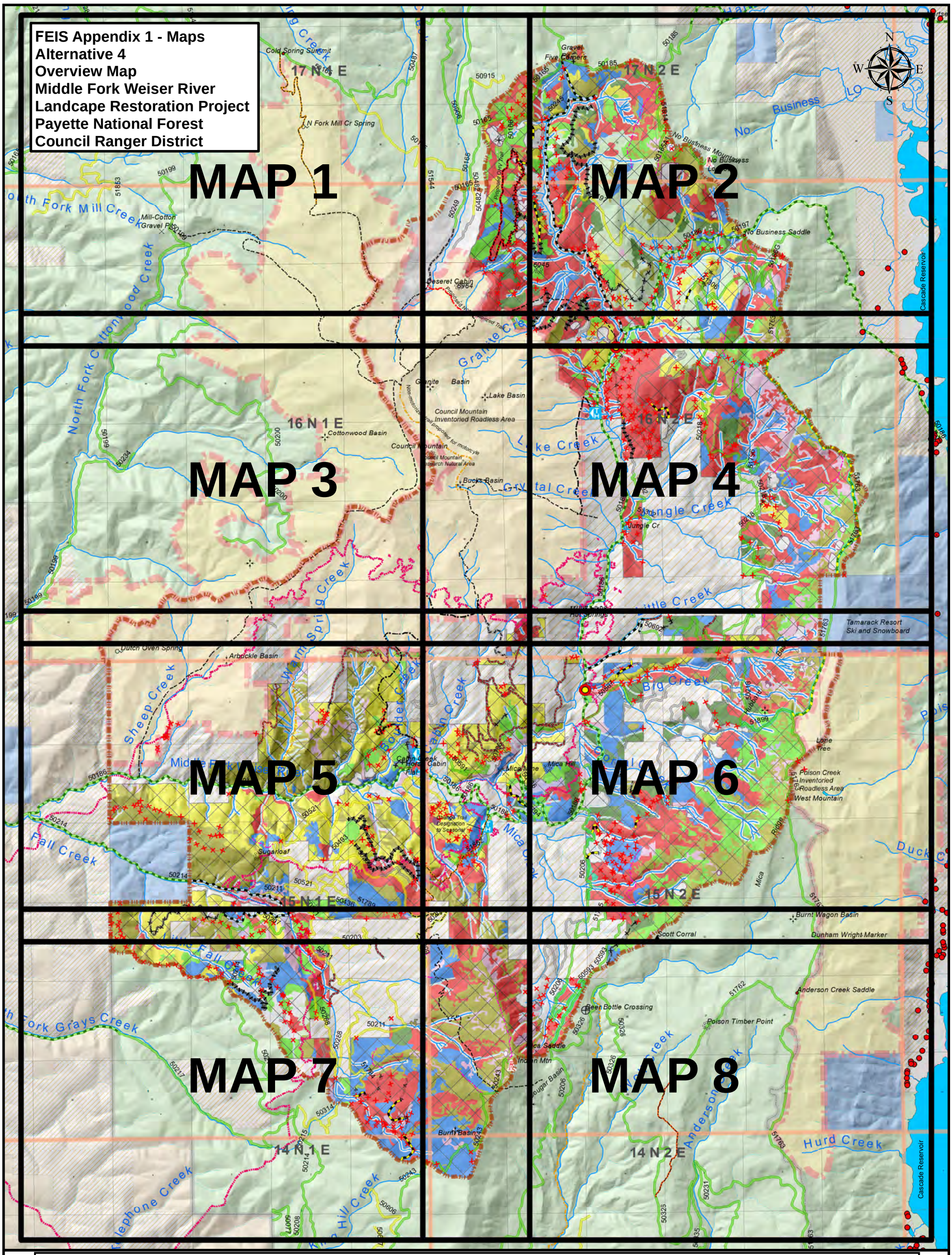
FEIS Appendix 1 - Maps
Alternative 4
Overview Map
Middle Fork Weiser River
Landcape Restoration Project
Payette National Forest
Council Ranger District



Legend

Road Type
- C - COUNTY, PARISH, BOROUGH
- NFSR - NATIONAL FOREST SYSTEM ROAD
- STATE

Displayed On Individual Maps
- UNAUTHORIZED
- P - PRIVATE
- PVT - UNDETERMINED

Alternative 4 Road Status
- CLOSED
- OPEN
- SEASONAL

Existing Trails
- ATV
- OHV
- Motorcycle
- Non-motorized

Proposed Vegetation Treatments
- Non-Commercial Thin
- Burned Areas/Plantations
- Commercial Thin-Free Thin
- Free Thin–Patch Cut-Modified Shelterwood
- Commercial Thin / Mature Plantations
- Conifer Removal in Aspen Stands
- Vegetation treatments in stands with Low Site Quality
- Non-Forested Treatment
- Wet Meadow Treatment
- Shaded Fuelbreak
- Fuel Reduction within an RCA
- Prescribed Burn Preparation Only
- Proposed Prescribed Burn Treatments

Proposed Road Treatments
- Long-Term Closure
- Implement BMPs
- Reconstruction
- Operational Maintenance Level 1 to 2
- Convert to Trail
- Road Realignment
- Add to System
- Decommission
- New Temporary Road
- Proposed Culvert Replacements
- Proposed Trailheads

Proposed Trails
- Proposed Non-motorized
- Proposed Reroute 198
- Proposed Reroute 205

Streams
- Intermittent
- Perennial
- Lakes

Geographic Points
- basin
- cabin
- camp
- campground
- corral
- crossing
- flat
- gap
- gravel pit
- guard station
- hot spring
- lookout
- mine
- radio tower
- spring
- summit

- Project Area
- Payette National Forest
- Grays Creek Fire
- Inventoried Roadless Areas

Ownership
- BLM
- USFS
- Private Land
- State of Idaho

Valley Co. Improved Values
- Valley Co. Improved Values

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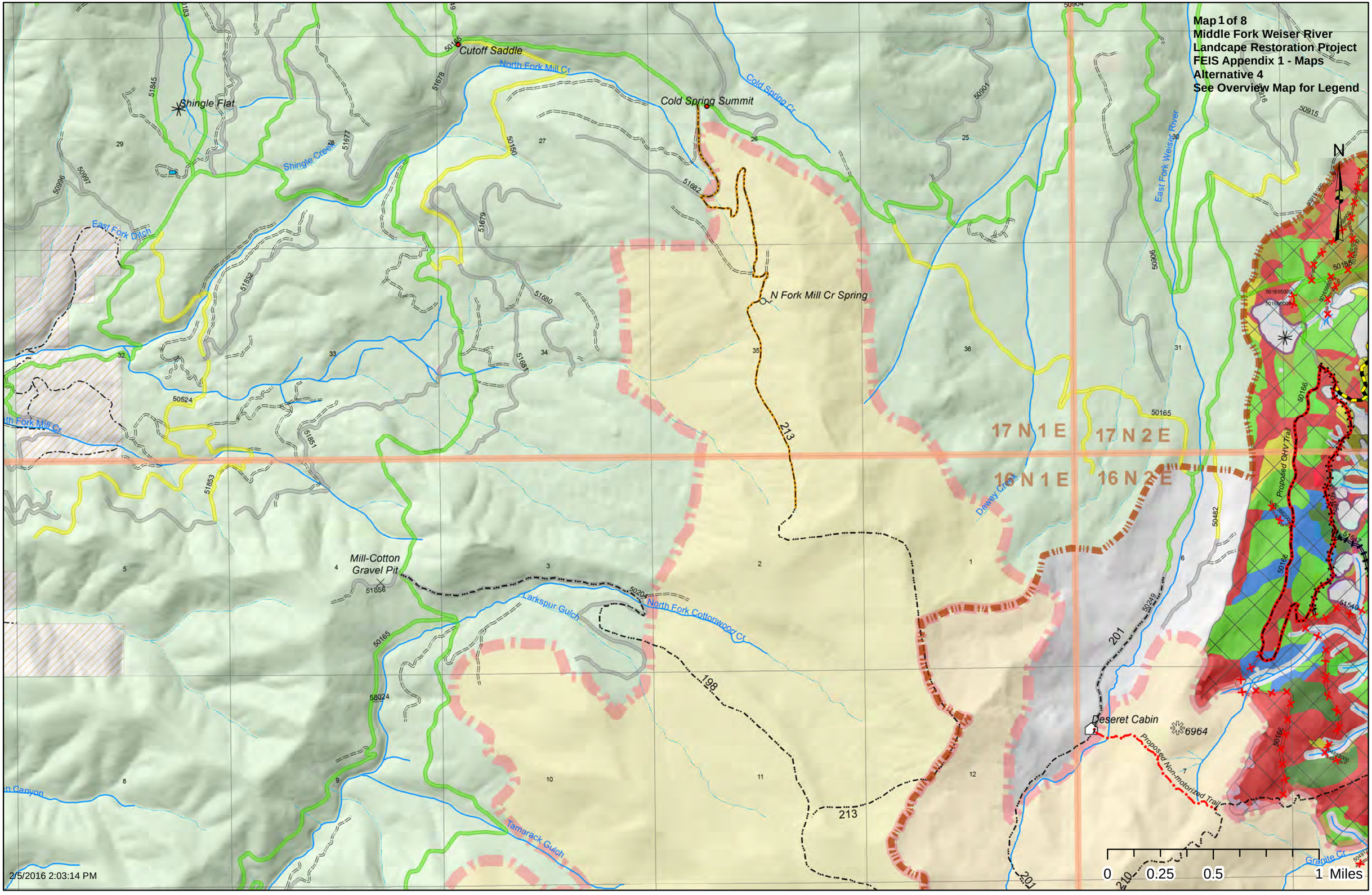
Map 1 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 4
See Overview Map for Legend
Cutoff Saddle
North Fork Mill Cr
Cold Spring Summit
Cold Spring Cr
Shingle Flat
Shingle Creek
East Fork Weiser River
East Fork Ditch
N Fork Mill Cr Spring
17 N 1 E
17 N 2 E
16 N 1 E
16 N 2 E
Dewey Creek
Proposed OHV Trail
Mill-Cotton Gravel Pit
Larkspur Gulch
North Fork Cottonwood Cr
Deseret Cabin
6964
Proposed Non-motorized Trail
Tamarack Gulch
Granite Cr
N
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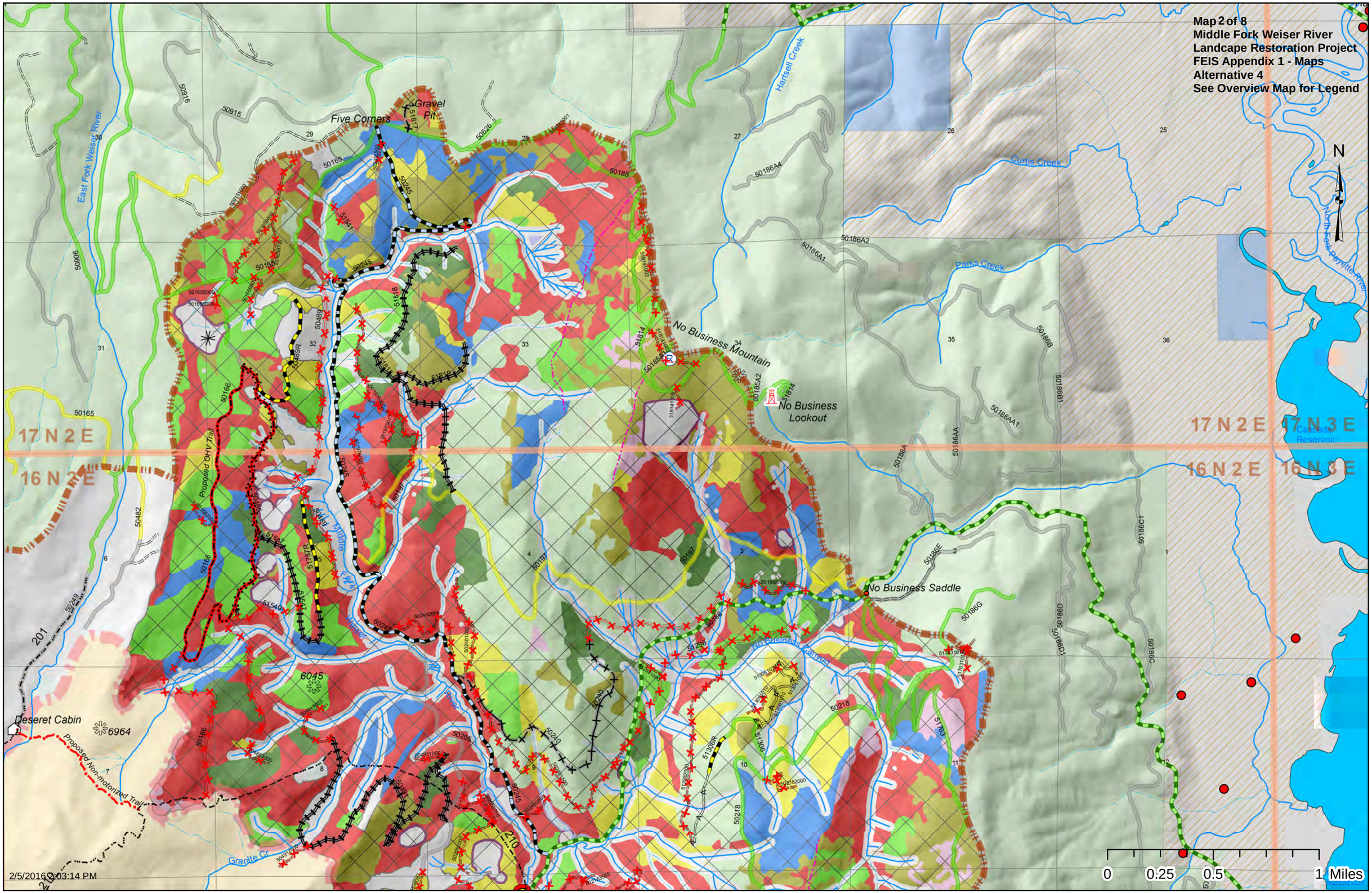
Map 2 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 4
See Overview Map for Legend
N
Five Corners
Gravel Pit
East Fork Weiser River
Hartsell Creek
Curtis Creek
Parks Creek
North Fork Payette River
No Business Mountain
No Business Lookout
No Business Saddle
No Business Canyon
Middle Fork
Proposed OHV Trail
Proposed Non-motorized Trail
Deseret Cabin
Granite Cr
Cascade Reservoir
17 N 2 E
16 N 2 E
17 N 3 E
16 N 3 E
6045
6964
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1 Miles
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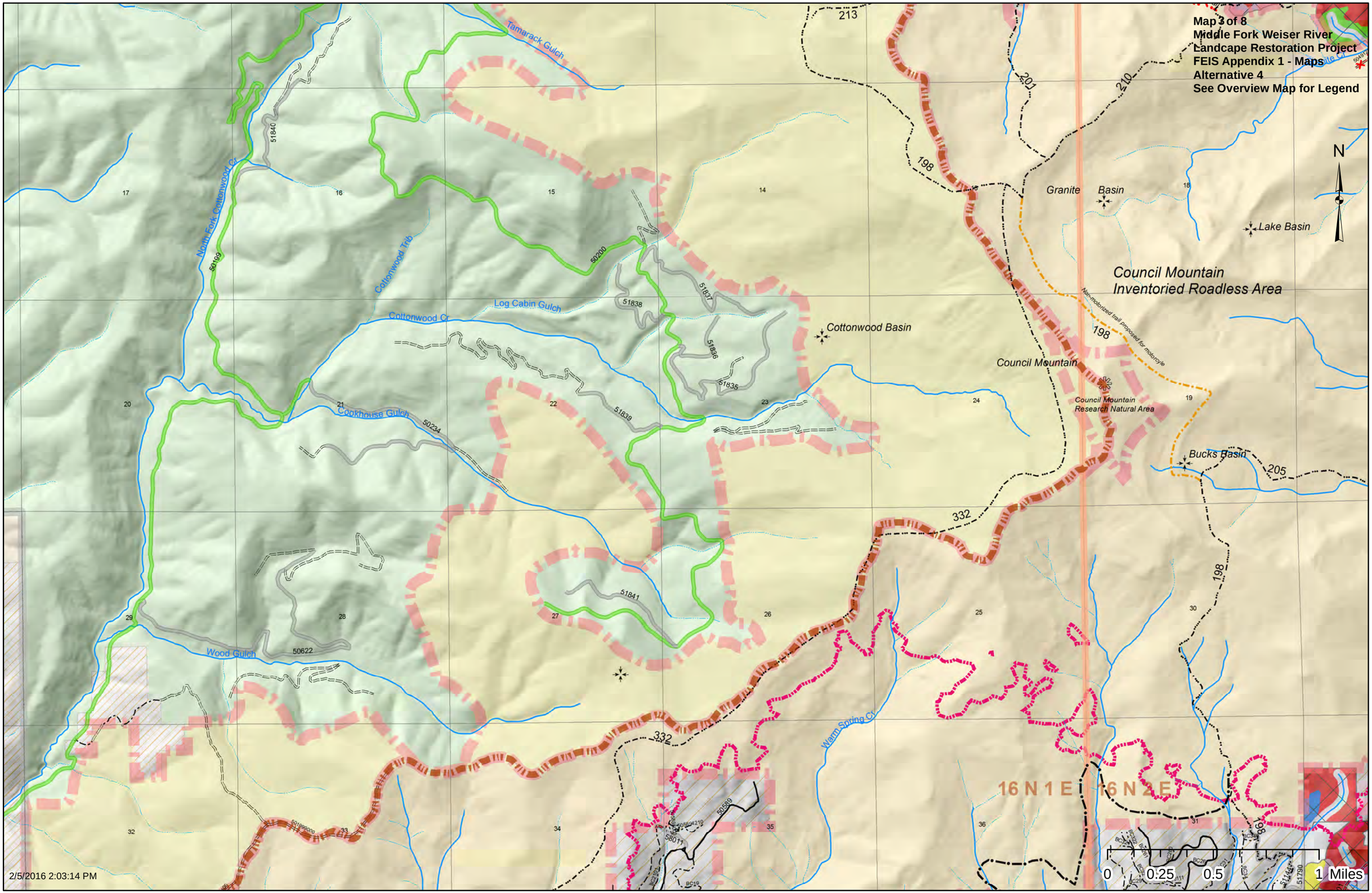
Map 3 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 4
See Overview Map for Legend
N
Tamarack Gulch
North Fork Cottonwood Cr
Cottonwood Trib
Log Cabin Gulch
Cottonwood Cr
Cookhouse Gulch
Wood Gulch
Warm Spring Cr
Granite Basin
Lake Basin
Cottonwood Basin
Council Mountain
Council Mountain Inventoried Roadless Area
Non-motorized trail proposed for motorcycle
Council Mountain Research Natural Area
Bucks Basin
16 N 1 E
16 N 2 E
0
0.25
0.5
1 Miles
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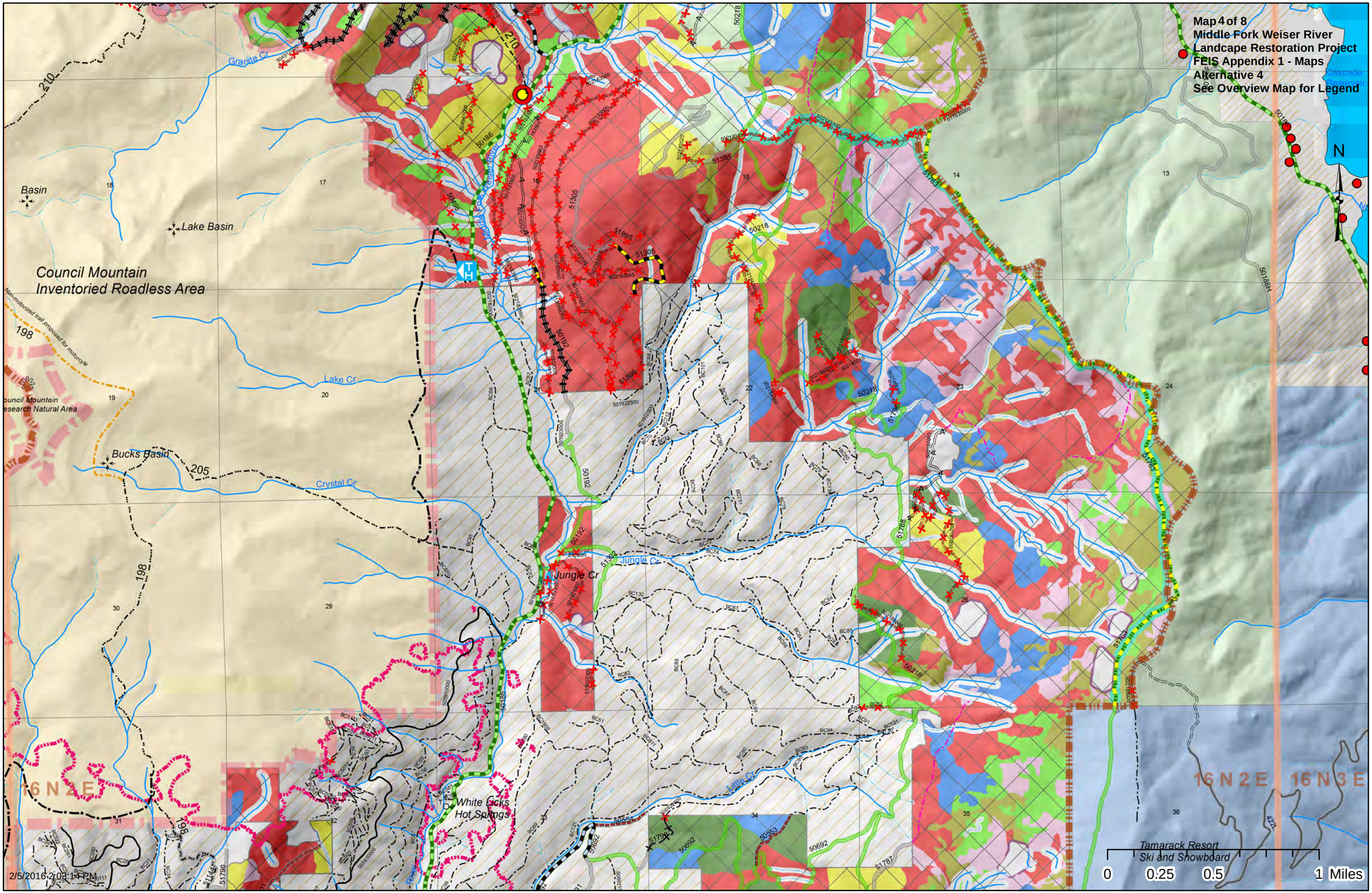
Map 4 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 4
See Overview Map for Legend
N
Granite Cr
Basin
Lake Basin
Council Mountain
Inventoried Roadless Area
Non-motorized trail proposed for motorcycle
Council Mountain
Research Natural Area
Lake Cr
Bucks Basin
Crystal Cr
Jungle Cr
Little Cr
White Licks
Hot Springs
Tamarack Resort
Ski and Snowboard
16 N 2 E
16 N 3 E
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1 Miles
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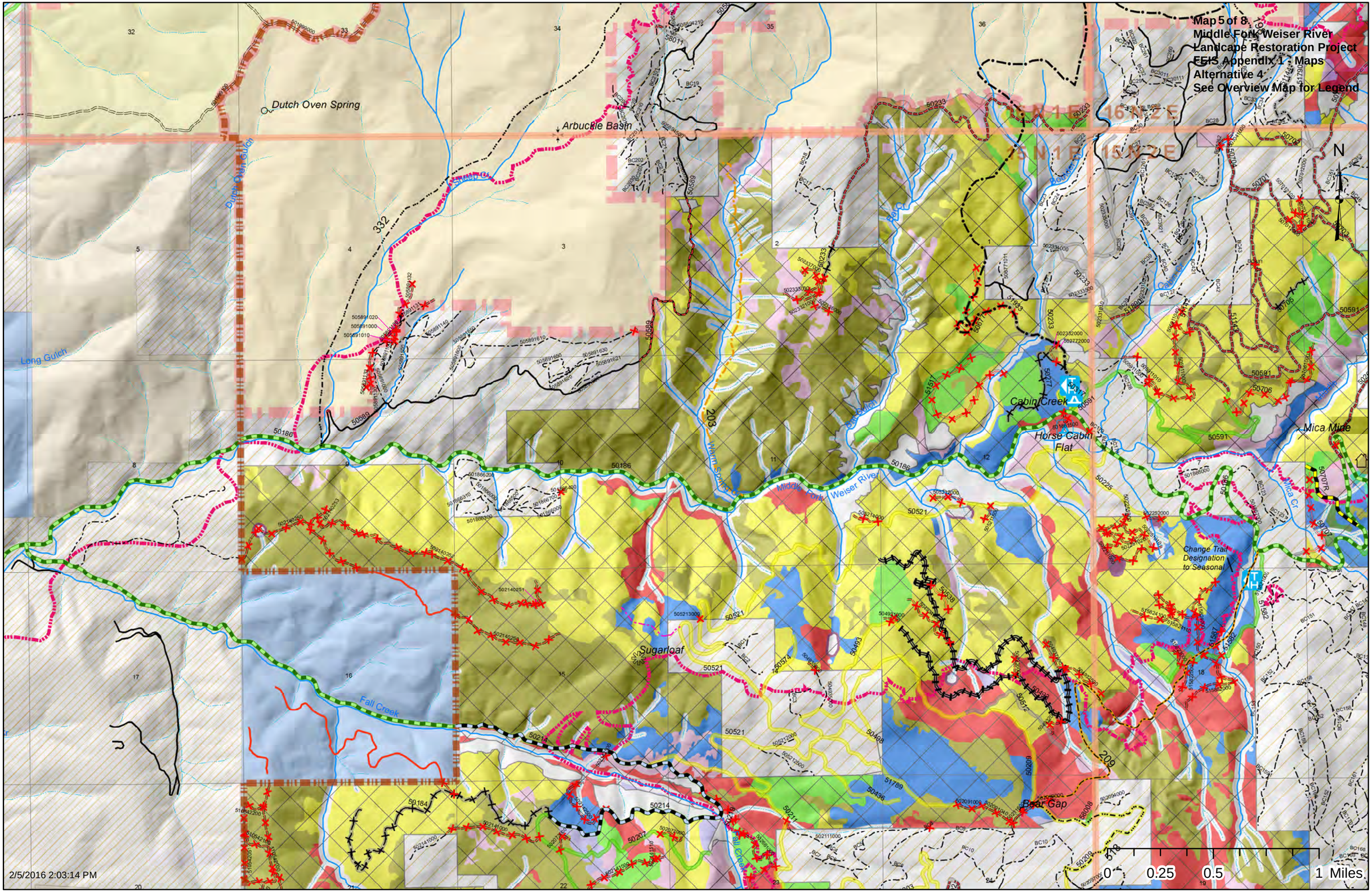
Map 5 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 : Maps
Alternative 4
See Overview Map for Legend
Dutch Oven Spring
Arbuckle Basin
Long Gulch
Dutch Oven Gulch
Fall Creek
Middle Fork Weiser River
Warm Springs Cr
Cabin Creek
Horse Cabin Flat
Mica Mine
Mica Cr
Change Trail Designation to Seasonal
Sugarloaf
Bear Gap
Trail Creek
332
203
209
50186
50214
50521
50589
50591
50706
50707
50707R
50233
50225
50184
50207
50211
50209
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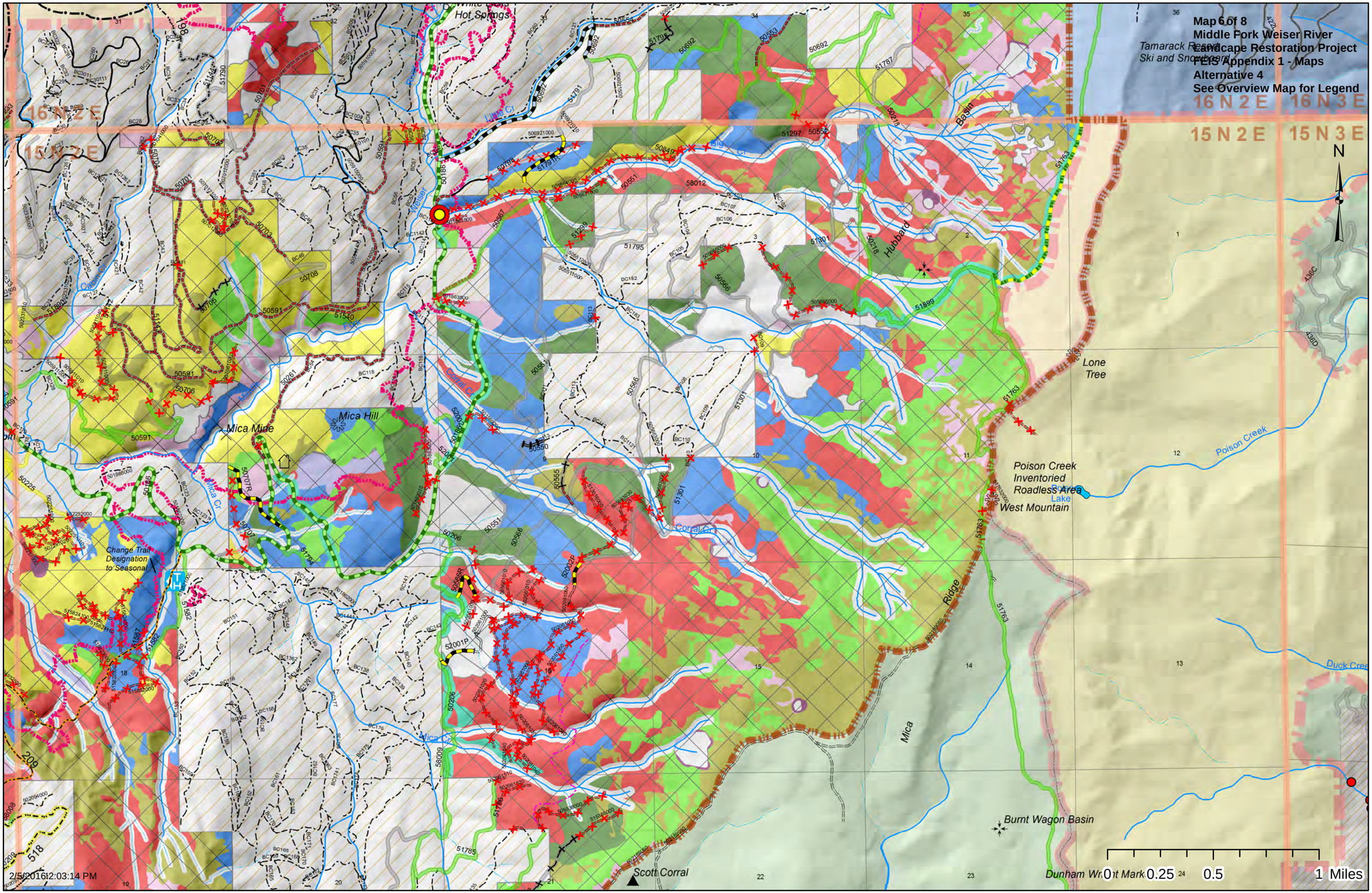
Map 6 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 4
See Overview Map for Legend
16 N 2 E
16 N 3 E
15 N 2 E
15 N 3 E
N
Hot Springs
Tamarack Resort
Ski and Snowboard
Little Cr
Big Cr
Weiser
Hubbard
Basin
Lone
Tree
Mica Mine
Mica Hill
Mica Cr
Change Trail
Designation
to Seasonal
Poison Creek
Poison Creek
Inventoried
Roadless Area
Lake
West Mountain
Corral Cr
Mica
Ridge
Burnt Wagon Basin
Scott Corral
Dunham Wr.
Mark
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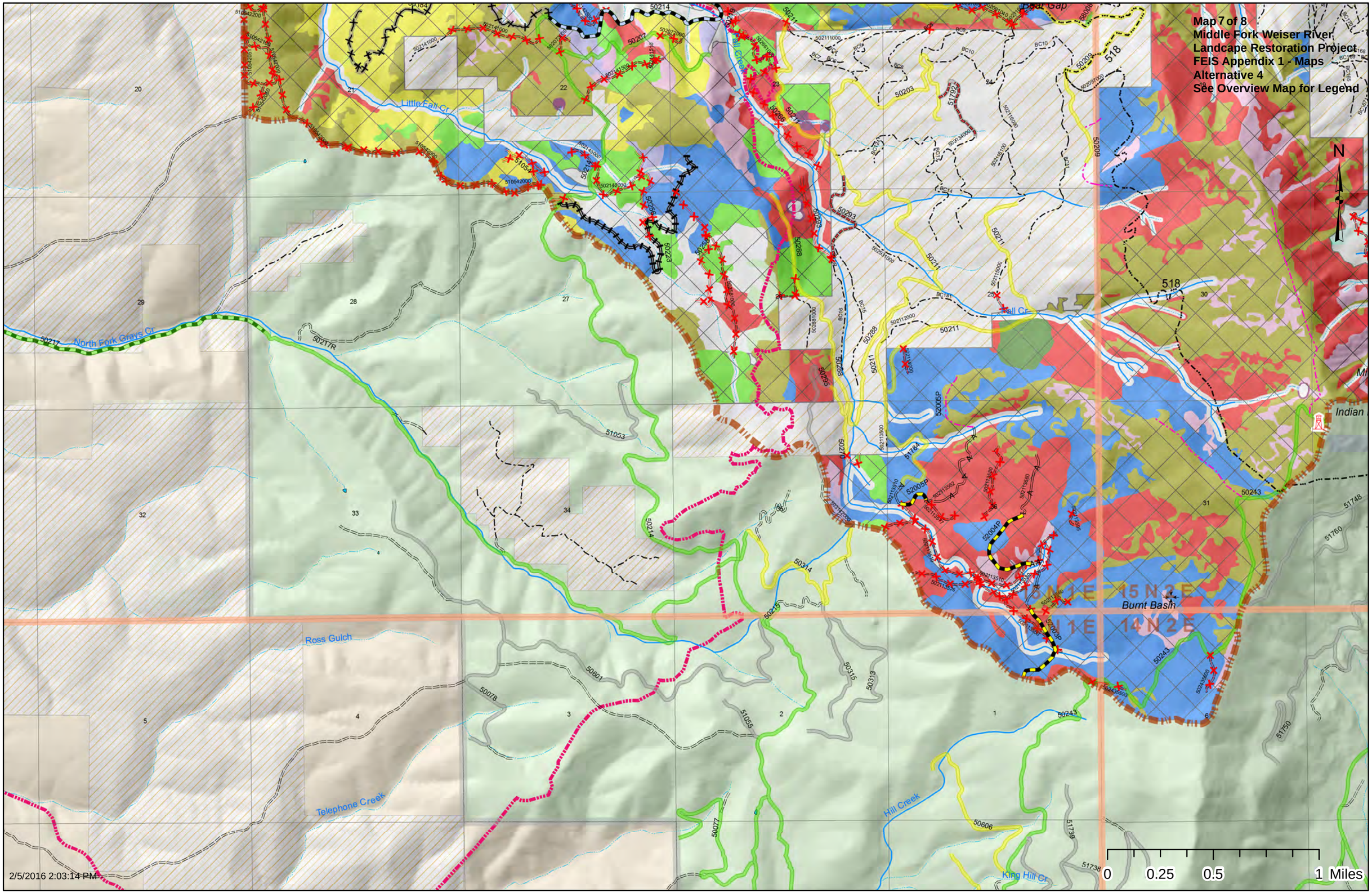
Map 7 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 4
See Overview Map for Legend
N
Little Fall Cr
North Fork Grays Cr
Ross Gulch
Telephone Creek
Hill Creek
King Hill Cr
Fall Cr
Burnt Basin
Indian
Bear Gap
13 N1E
15 N2E
14 N1E
14 N2E
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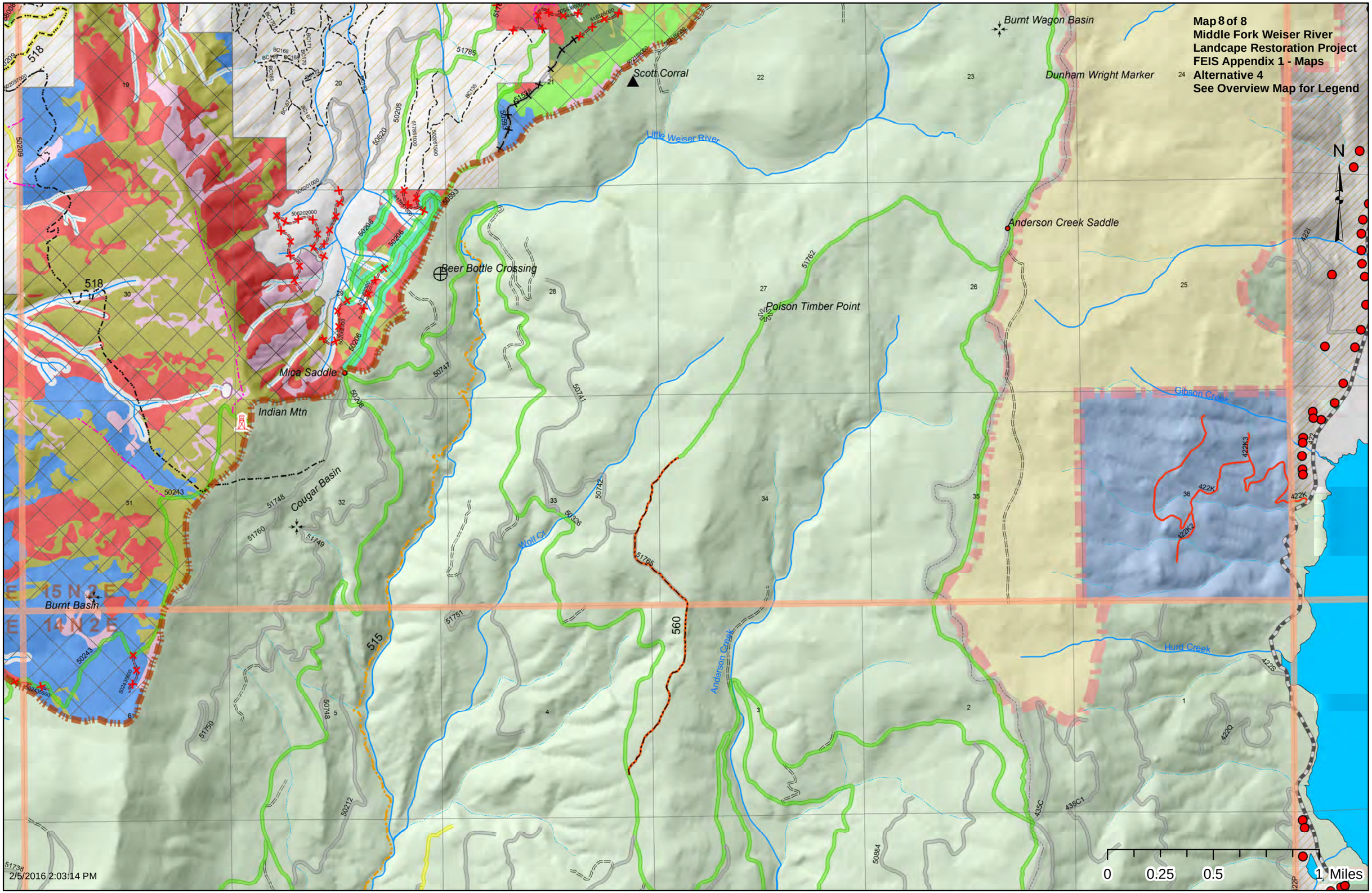
1 Miles
2/5/2016 2:03:14 PM


Map 8 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 4
See Overview Map for Legend
Burnt Wagon Basin
Dunham Wright Marker
Scott Corral
Little Weiser River
Anderson Creek Saddle
Beer Bottle Crossing
Poison Timber Point
Mica Saddle
Indian Mtn
Cougar Basin
Burnt Basin
Wolf Cr
Anderson Creek
Gibson Creek
Hurd Creek
N
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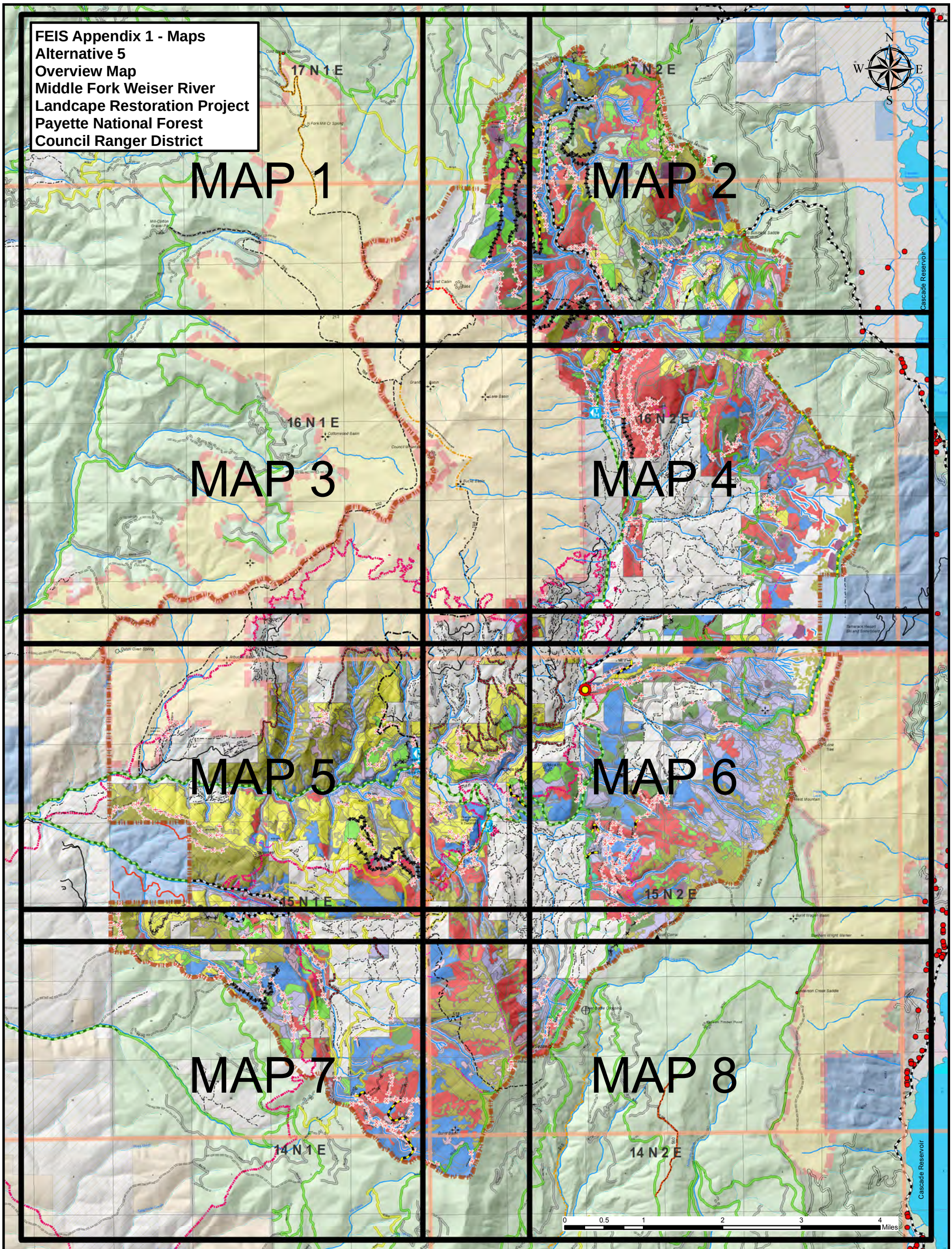
0.5
1 Miles
2/5/2016 2:03:14 PM



Road Type
- C - COUNTY, PARISH, BOROUGH
- NFSR - NATIONAL FOREST SYSTEM ROAD
- STATE

Displayed On Individual Maps
- UNAUTHORIZED
- P - PRIVATE
- PVT - UNDETERMINED

Alternative 5 Road Status
- CLOSED
- OPEN
- SEASONAL

Vegetation Treatments
- Non-Commercial Thin
- Burned Areas/Plantations
- Commercial Thin-Free Thin
- Free Thin–Patch Cut-Modified Shelterwood
- Commercial Thin / Mature Plantations
- Conifer Removal in Aspen Stands
- Vegetation treatments in stands with Low Site Quality
- Non-Forested Treatment
- Wet Meadow Treatment
- Shaded Fuelbreak
- Fuel Reduction within an RCA
- Prescribed Burn Preparation Only
- Proposed Prescribed Burn Treatments

Proposed Road Treatments
- Long-Term Closure
- Implement BMP's
- Reconstruction
- Maintenance Level 1 to 2
- Convert to Trail
- Road Realignment
- Add to System
- Decommission
- New Temporary Road
- Proposed Culvert Replacements
- Proposed Trailheads

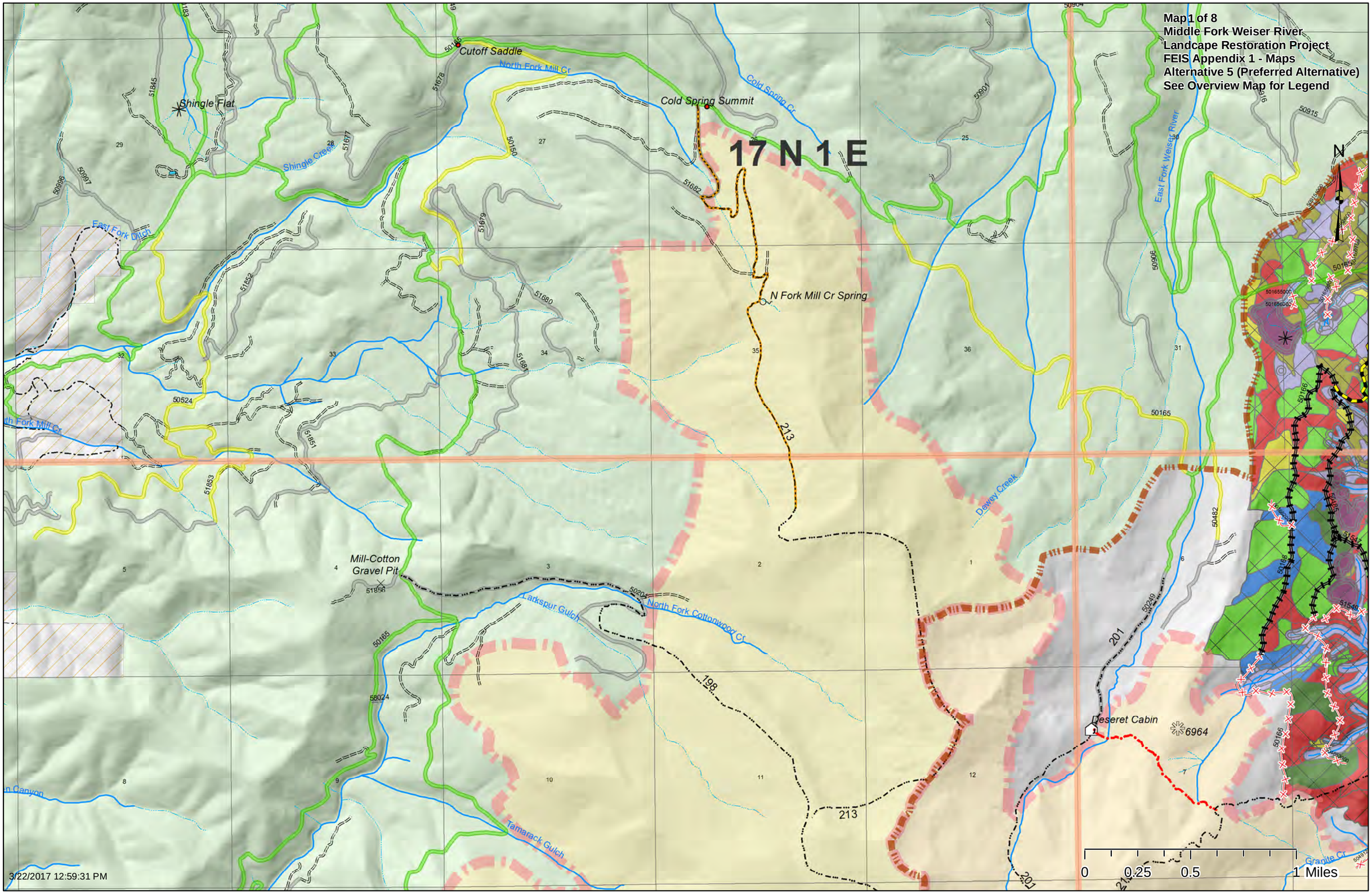
Existing Trails
- ATV
- OHV
- Motorcycle
- Non-motorized

Proposed Trails
- Proposed Non-motorized
- Proposed Reroute 198

Streams
- Intermittent
- Perennial
- Lakes

- Project Area
- Payette National Forest
- Grays Creek Fire
- Inventoried Roadless Areas

Ownership
- BLM
- USFS
- Private Land
- State of Idaho
- Valley Co. Improved Values


Map 1 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 5 (Preferred Alternative)
See Overview Map for Legend
17 N 1 E
Cutoff Saddle
North Fork Mill Cr
Cold Spring Summit
Cold Spring Cr
Shingle Flat
Shingle Creek
East Fork Ditch
East Fork Weiser River
N Fork Mill Cr Spring
Dawey Creek
Mill-Cotton Gravel Pit
Larkspur Gulch
North Fork Cottonwood Cr
Tamarack Gulch
Deseret Cabin
6964
Granite Cr
N
0 0.25 0.5 1 Miles
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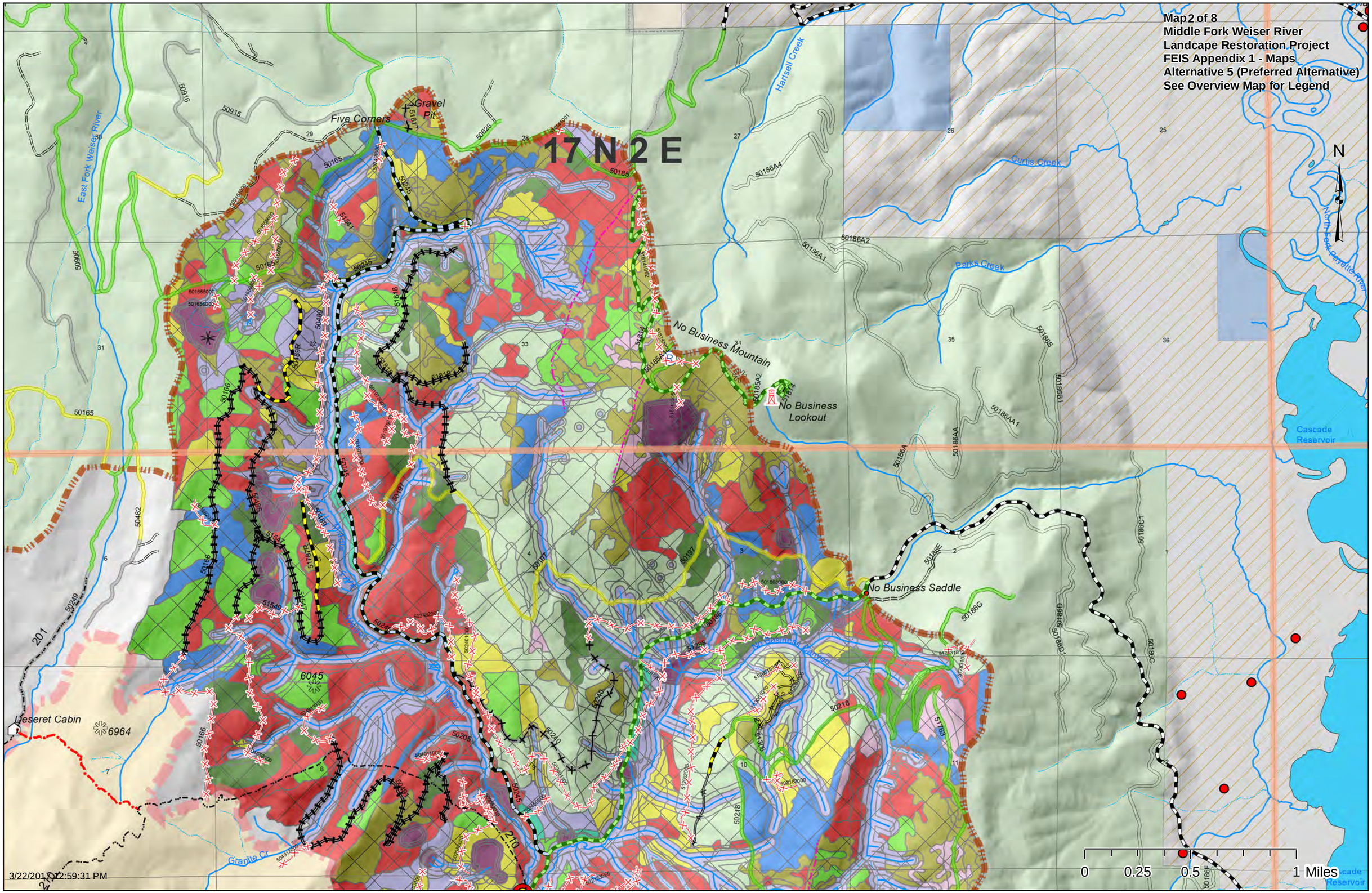
Map 2 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 5 (Preferred Alternative)
See Overview Map for Legend
17 N 2 E
Five Corners
Gravel Pit
East Fork Weiser River
Hartsell Creek
Curtis Creek
Parks Creek
North Fork Payette River
No Business Mountain
No Business Lookout
No Business Saddle
Cascade Reservoir
Deseret Cabin
6964
6045
Granite Cr
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1 Miles
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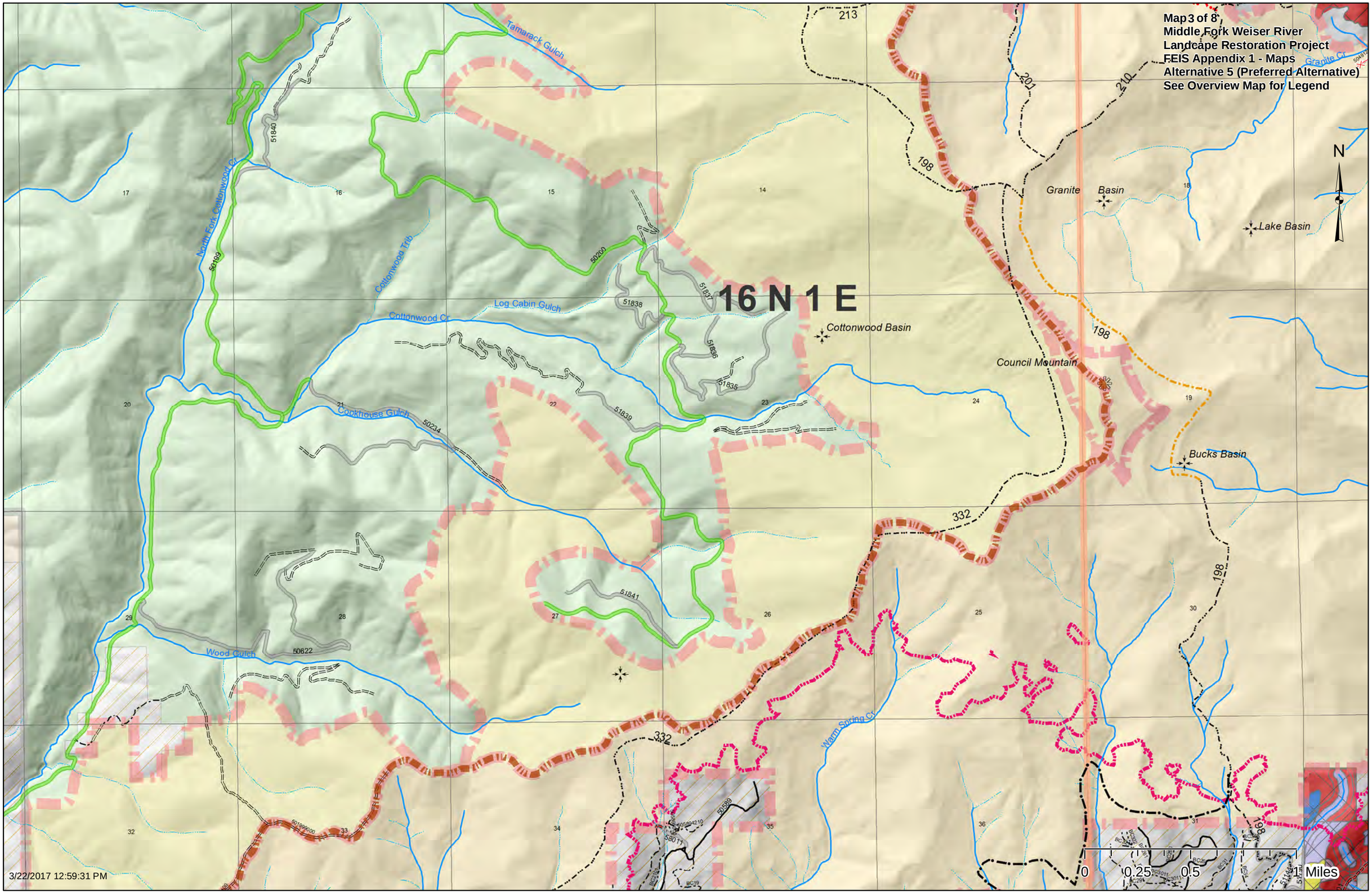
Map 3 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 5 (Preferred Alternative)
See Overview Map for Legend
N
16 N 1 E
Tamarack Gulch
North Fork Cottonwood Cr
Cottonwood Trib
Cottonwood Cr
Log Cabin Gulch
Cockhouse Gulch
Wood Gulch
Warm Spring Cr
Granite Cr
Granite Basin
Lake Basin
Cottonwood Basin
Council Mountain
Bucks Basin
213
201
210
198
332
51840
50199
50200
51837
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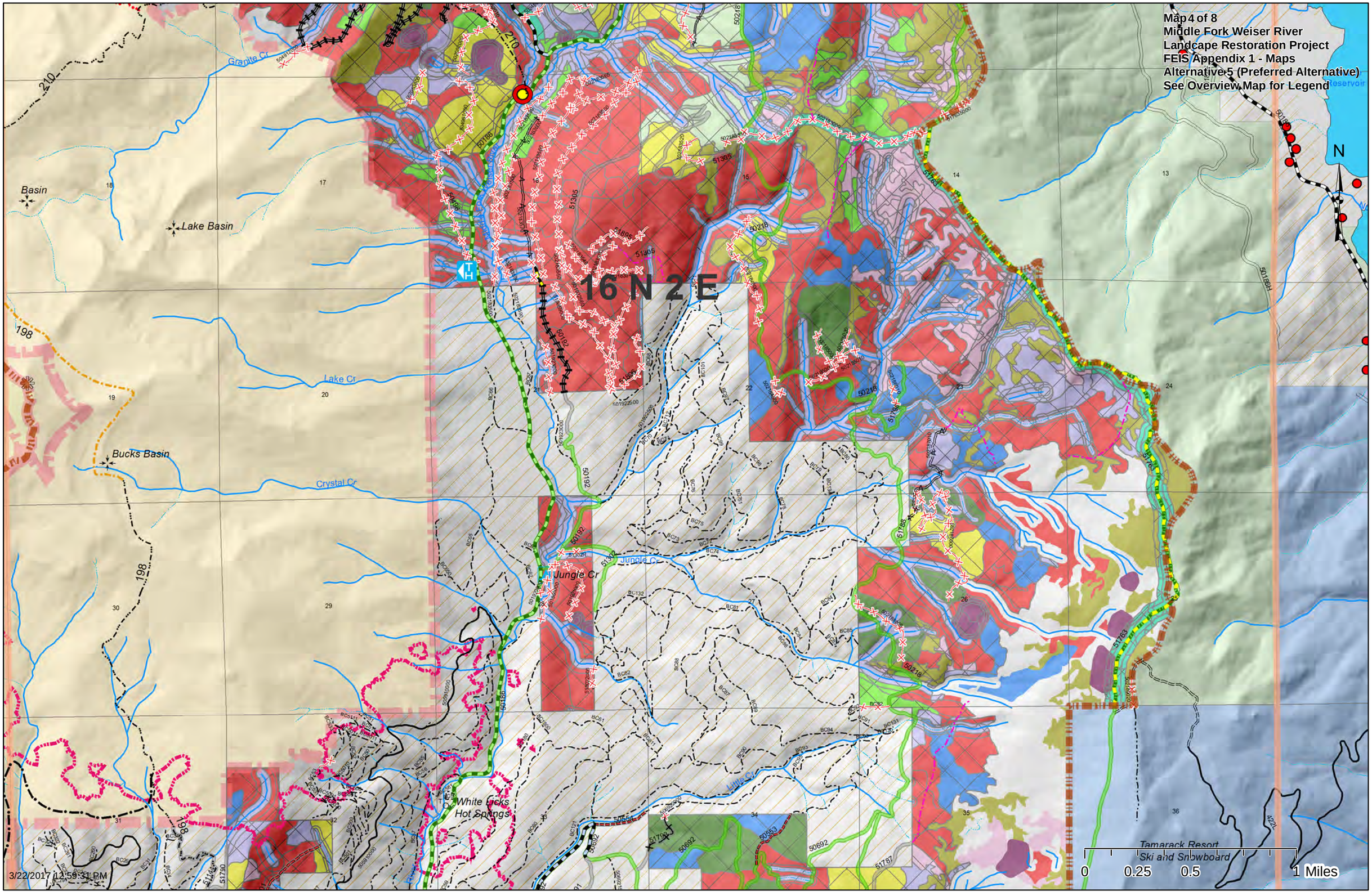
Map 4 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 5 (Preferred Alternative)
See Overview Map for Legend
16 N 2 E
Granite Cr
Lake Basin
Basin
Lake Cr
Bucks Basin
Crystal Cr
Jungle Cr
White Licks Hot Springs
Tamarack Resort Ski and Snowboard
Reservoir
N
0 0.25 0.5 1 Miles
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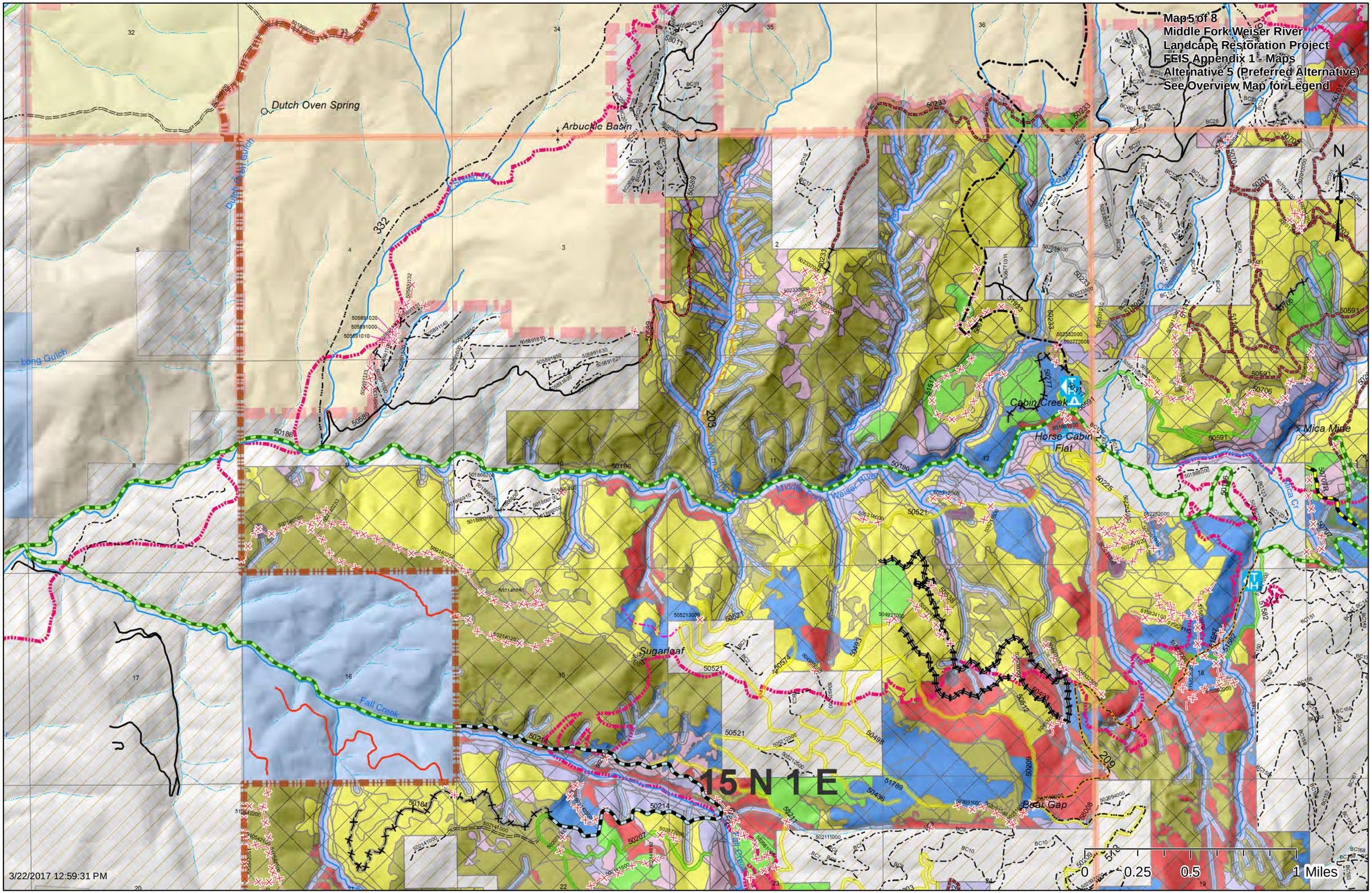
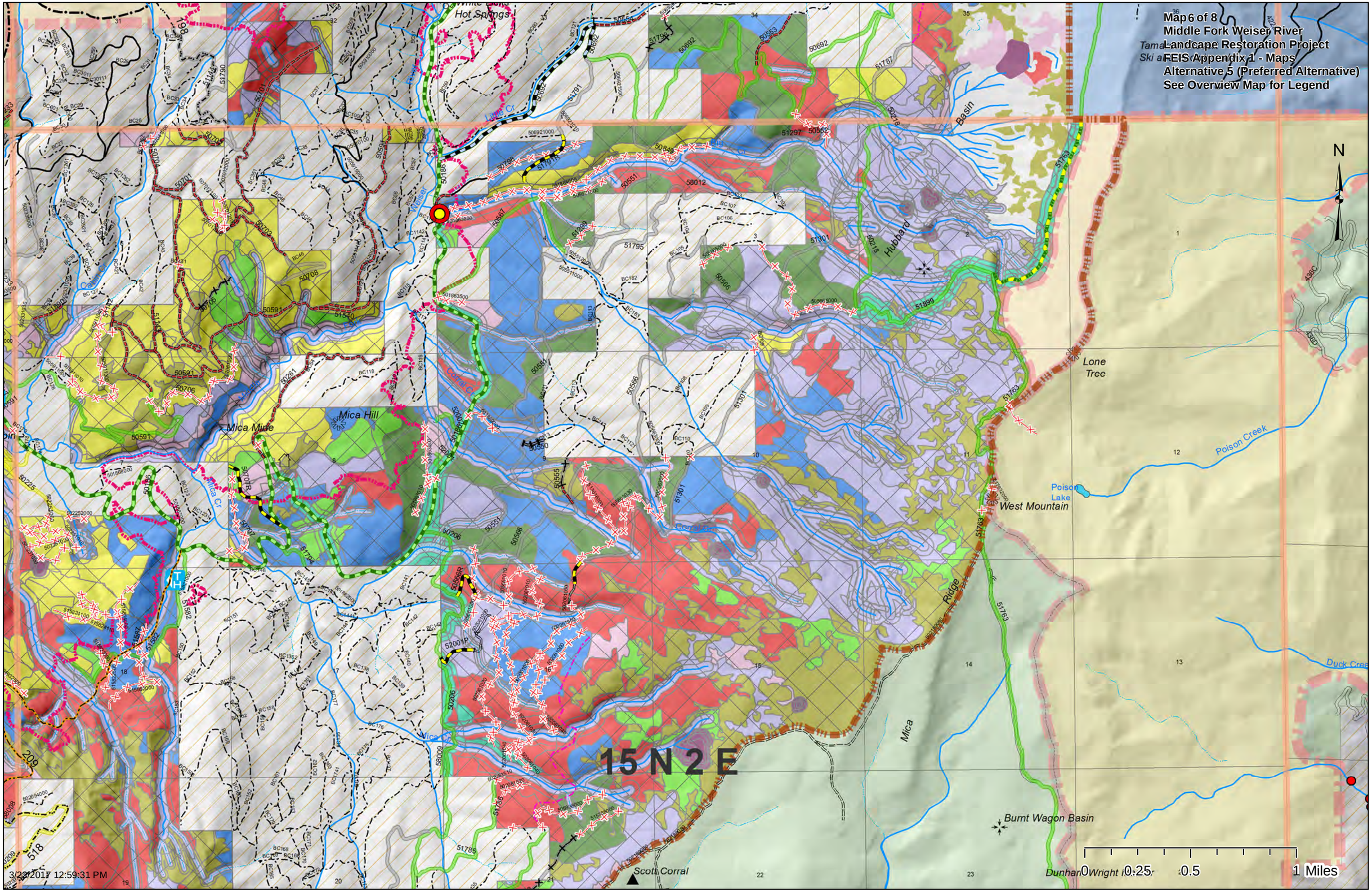
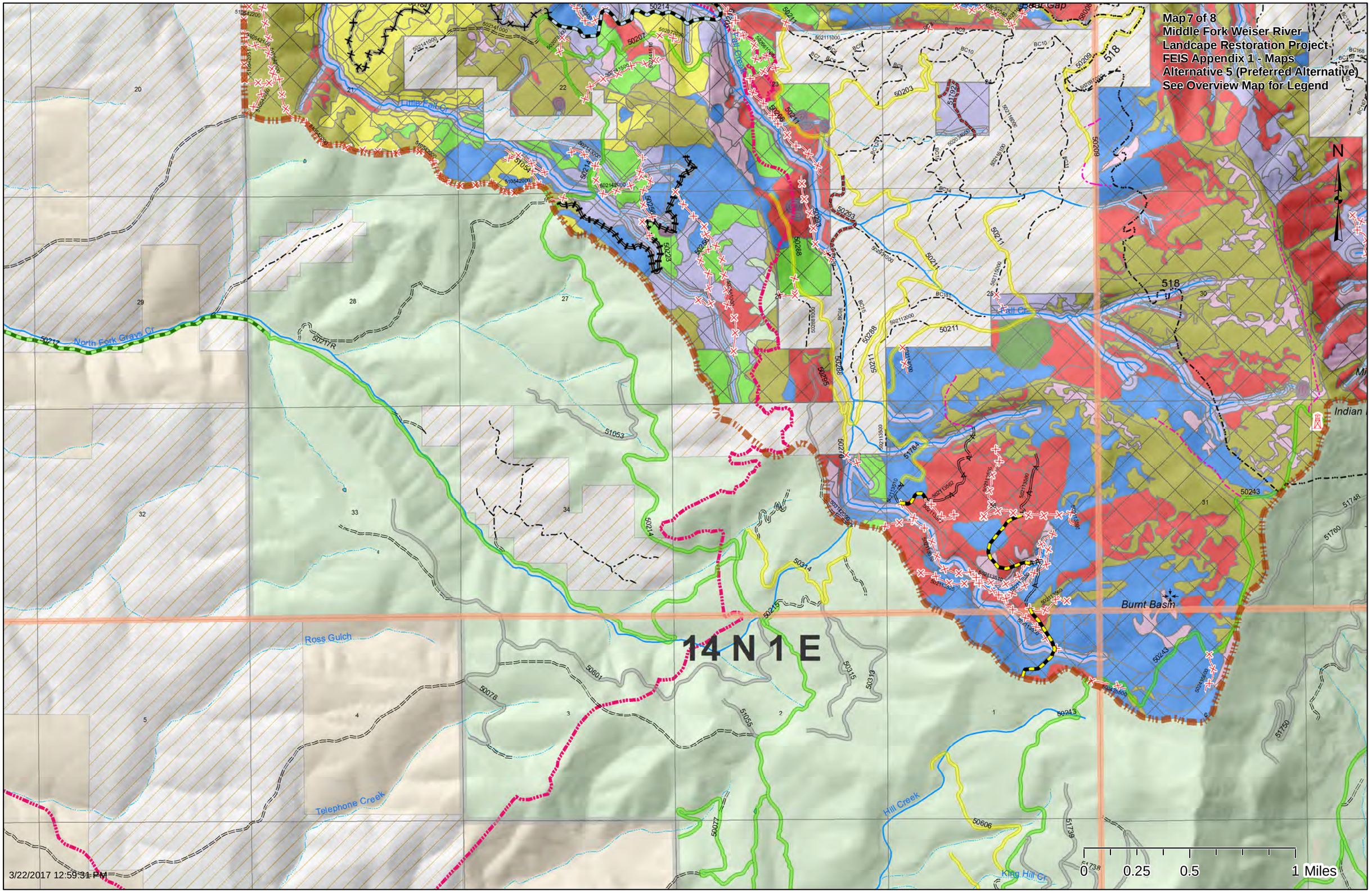
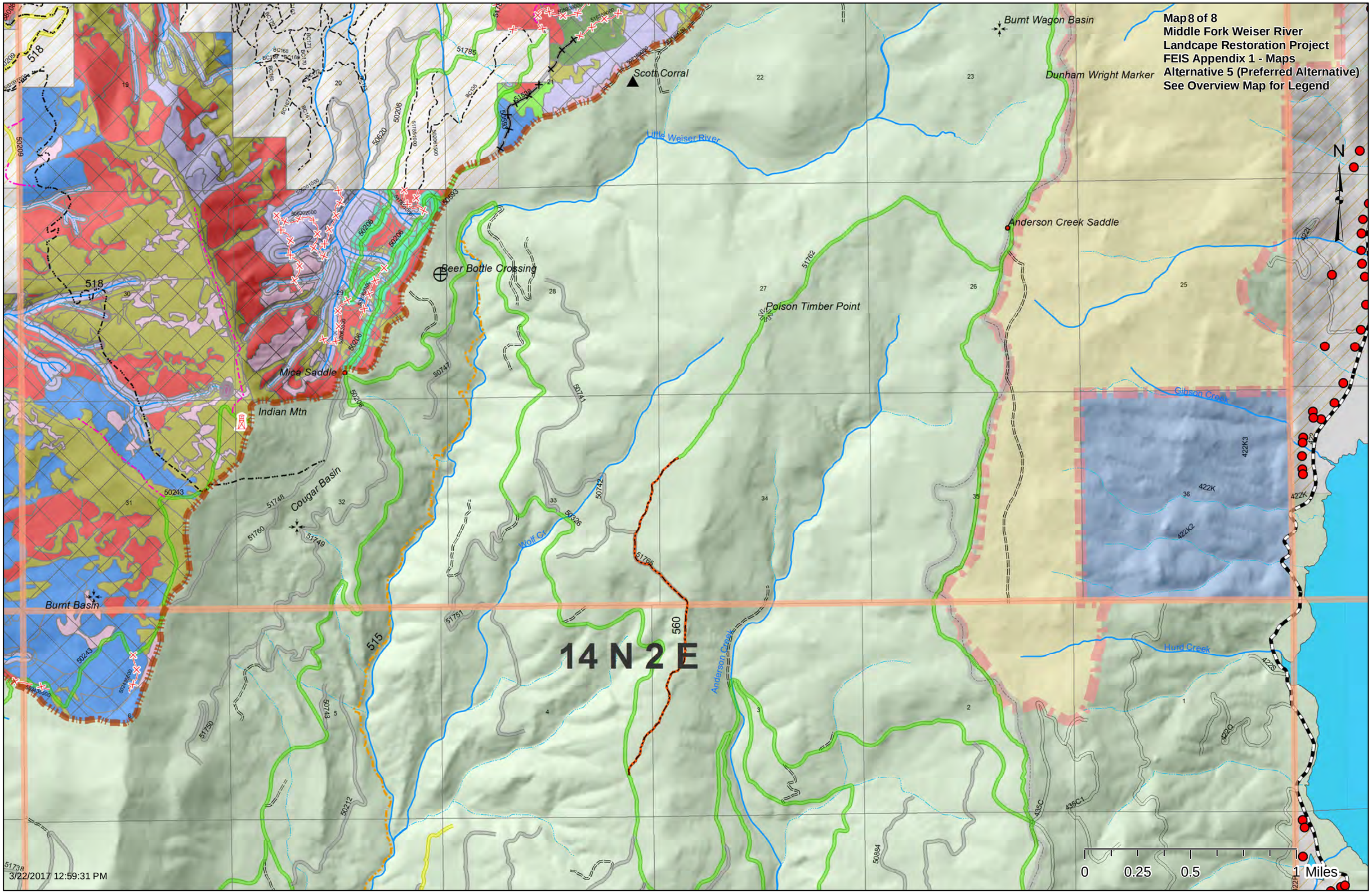

Map 5 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 5 (Preferred Alternative)
See Overview Map for Legend
Dutch Oven Spring
Arbuckle Basin
Dutch Oven Gulch
Long Gulch
Cabin Creek
Horse Cabin Flat
Mica Mine
Warm Spring
Middle Fork Weiser River
Mica Cr
Sugarloaf
Fall Creek
Bear Gap
15 N 1 E
N
0
0.25
0.5
1 Miles
3/22/2017 12:59:31 PM


Map 6 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 5 (Preferred Alternative)
See Overview Map for Legend
N
Hot Springs
Hubbard
Basin
Lone
Tree
Poison Creek
Poison
Lake
West Mountain
Mica Mine
Mica Hill
Mica Cr.
Weiser
Ridge
Mica
Burnt Wagon Basin
Scott Corral
Dunham
Wright
15 N 2 E
0
0.25
0.5
1 Miles
3/2/2017 12:59:31 PM


Map 7 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 5 (Preferred Alternative)
See Overview Map for Legend
N
14 N 1 E
North Fork Grays Cr
Ross Gulch
Telephone Creek
Hill Creek
King Hill Cr
Burnt Basin
Indian
0 0.25 0.5 1 Miles
3/22/2017 12:59:31 PM


Map 8 of 8
Middle Fork Weiser River
Landcape Restoration Project
FEIS Appendix 1 - Maps
Alternative 5 (Preferred Alternative)
See Overview Map for Legend
Burnt Wagon Basin
Dunham Wright Marker
Scott Corral
Little Weiser River
Anderson Creek Saddle
Beer Bottle Crossing
Poison Timber Point
Mica Saddle
Indian Mtn
Cougar Basin
Burnt Basin
Wolf Cr
Anderson Creek
Gibson Creek
Hurd Creek
14 N 2 E
N
0 0.25 0.5 1 Miles
3/22/2017 12:59:31 PM

Appendix 2
Road Treatment Table

The following tables display road management actions by alternative in the Project. The road attributes displayed are:

- Rd number: Road number or ID
- Owner: FS refers to National Forest Service (NFS) lands, PVT are private lands
- Jurisdiction: The entity with rights to the road. FS is Forest Service, CNTY is county and Private is private
- Road Type:
  - County—County Road
  - NA—Not applicable to this attribute
  - NFSR—National Forest System Road
  - Private—Private Road
  - Unauthorized—Unauthorized route
  - Undetermined—Road type not attributed (applies to roads on private lands or under private jurisdiction)
- Status: The travel status of the road
  - Closed—Not Open the public for motor vehicle travel
  - NA—Not applicable to this attribute
  - Open—Open all year long to motor vehicle travel
  - Private—Not regulated by the National Forest
  - Seasonal—Open seasonally to motor vehicle travel
  - Unauthorized—Not Open to motor vehicle travel
- Alt 2: The treatment proposed in Alternative 2
- Alt 3: The treatment proposed in Alternative 3
- Alt 4: The treatment proposed in Alternative 4
- Road Treatments
  - Road Decommission Treatments:
  - Full Recontour—Full obliteration of the road or route

- Full Recont.-PC—Full obliteration of the road or route with (range) permittee coordination to allow for cattle movement
- Outslope 20%—Decompact road surface, provide drainage and outslope the road bed
- Spot Treatment—Roads would receive targeted work to improve drainage

- Other Designations or Treatments:
  - Add to System—These routes would be incorporated in the Payette National Forest Road Atlas. Once utilized for treatment, the roads would be put into an Operational Maintenance Level (OML) 2 closure (see definition in Glossary). Alternative 4 is the only alternative that proposes Add to System roads.
  - Convert to Trail—Current National Forest System Road that would be converted to a trail Open to all vehicles. This applies to the West Mountain Jeep Trail, FSR 51763.
  - Implement BMPs—These roads are currently OML 1 roads that Best Management Practices (BMPs) have not been implemented (see glossary). BMPs would be implemented.
  - LTC—These roads are currently OML 2 roads that would be changed to OML 1 and put into Long-term Closure (BMPs implemented)
  - New Temp Road—New temporary road construction which would be fully obliterated following use.
  - No Change—No change in STATUS. Roads may receive maintenance.
  - OM L1 to L2—Roads that are currently in OML 1 that would be changed to OML 2. These roads currently have private easements that allow for access by Potlatch Corporation. Changing the OML to 2 would allow for maintenance while ensuring access.
  - Private—Roads with private jurisdiction, no treatment planned other than log haul maintenance if applicable.
  - Reconstruction—Road improvement Activity that results in an increase of an existing road’s traffic service level expansion of its capacity, or a change in its original design function.
  - Realignment—Roads proposed to realign and existing road or road network. The existing roads would be replaced by the realignment and decommissioned.
  - Unauthorized—Unauthorized route where no treatment is proposed.
  - Undetermined—Road type not attributed (applies to roads on private lands or under private jurisdiction). No treatment proposed.

Table 1: Roads within the Project area on National Forest System (NFS) lands or under National Forest jurisdiction that propose a treatment in an action alternative (See Table 2 for road treatment outside of the Project area).

Rd Number	Owner	Jurisdiction	Road Type	Status	Alt 2	Alt 3	Alt 4	Alt 5	Miles
50165	FS	FS	NFSR	Open	No change	No change	No change	No change	1.55
50165	FS	FS	NFSR	Open	No change	No change	No change	No change	1.55
50165	FS	FS	NFSR	Seasonal	No change	No change	No change	No change	0.04
501655000	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.01
501656000	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.02
501659500	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.23
501659600	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.70
501659700	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.22
50166	FS	FS	NFSR	Closed	Full recontour	Full recontour	Full recontour	Full recontour	0.98
50166	FS	FS	NFSR	Closed	No change	Full recontour	No change	LTC	1.48
50166	FS	FS	NFSR	Closed	No change	No change	No change	No change	0.13
50166	FS	FS	NFSR	Open	No change	No change	No change	No change	0.34
501662000	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.18
50184	FS	FS	NFSR	Closed	Implement BMPS	Implement BMPS	Implement BMPS	Implement BMPS	1.73
501841000	FS	FS	Unauthorized	Unauthorized	Spot treatment	Spot treatment	Spot treatment	Spot treatment	0.08
50185	FS	FS	NFSR	Open	No change	No change	No change	No change	0.97
50185A1	FS	FS	NFSR	Open	No change	No change	No change	No change	0.37
50185A2	FS	FS	NFSR	Open	No change	No change	No change	No change	0.03
50186	FS	CNTY	County	Open	No change	No change	No change	No change	10.69
501861500	FS	FS	Unauthorized	Unauthorized	Spot treatment	Spot treatment	Spot treatment	Spot treatment	0.08
501862500	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.04
501863000	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.34
501863010	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.18
501863500	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.11
501863500	PVT	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.04
501863800	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.12
501864000	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	1.25
501865000	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.21
501866000	FS	Private	Undetermined	Private	Undetermined	Undetermined	Undetermined	Undetermined	0.01
501866400	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.03
501868000	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.38
501869200	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.19
50186G	FS	FS	NFSR	Open	No change	Full recontour	No change	No change	0.28
50192	FS	FS	NFSR	Closed	LTC	Full recontour	LTC	LTC	0.55
50192	FS	FS	NFSR	Open	No change	No change	No change	No change	0.42

Rd Number	Owner	Jurisdiction	Road Type	Status	Alt 2	Alt 3	Alt 4	Alt 5	Miles
50192	PVT	FS	NFSR	Closed	No change	No change	No change	No change	0.22
50192	PVT	FS	NFSR	Open	No change	No change	No change	No change	0.48
501920800	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.15
501921000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.40
501922500	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.04
501922550	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.18
501922560	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.37
501923000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.27
50192P	FS	FS	NA	NA	NA	NA	Realignment	Realignment-LTC	0.12
50197	FS	FS	NFSR	Seasonal	No Change	Full Recontour	No Change	No Change	2.19
50197	FS	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	1.84
501975000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.99
501975010	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.16
501976000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.52
50203	FS	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.23
50203	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	1.18
50205	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	1.50
502052000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.70
502052010	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.16
502053000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.19
50206	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	3.47
50206	PVT	FS	NFSR	Open	No Change	No Change	No Change	No Change	1.51
502061000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Add to System	Add to System	0.27
502061000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	1.55
502061010	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.48
502061020	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.67
502061030	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.42
502061040	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.19
502061050	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Add to System	Add to System	0.10
502061050	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.38
502061060	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.26
502061500	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.12
502061510	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.05
502061520	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.21
502062000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.32
502062300	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.28
50207	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.97
502072000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.14

Rd Number	Owner	Jurisdiction	Road Type	Status	Alt 2	Alt 3	Alt 4	Alt 5	Miles
502073000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.12
50209	FS	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	1.67
50209	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	2.16
502091000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.13
502091040	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.17
502092000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.12
50209P	FS	FS	NA	NA	New Temp Road	New Temp Road	New Temp Road	New Temp Road	0.07
50209P	PVT	FS	NA	NA	New Temp Road	New Temp Road	New Temp Road	New Temp Road	0.15
50211	FS	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	1.87
50211	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	3.41
502111000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.05
502113510	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Add to System	Add to System	0.11
502113510	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Add to System	Add to System	0.03
502113510	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	1.05
502113525	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.34
502113530	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.56
502113550	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.40
502113560	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Add to System	Add to System	0.60
502113560	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.23
502113577	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Add to System	Add to System	0.56
502113577	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.19
502113578	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.16
502113580	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.39
502113595	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.07
502114000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.12
502115000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.12
502116000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.16
50214	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	1.10
50214	PVT	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.20
50214	FS	FS	NFSR	Open	Reconstruction	Reconstruction	Reconstruction	Reconstruction	2.51
502140250	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	1.36
502140251	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.05
502140252	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	1.47
502140253	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.08
502141000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.48
502141500	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.48
502141510	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.05
502142000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.38

Rd Number	Owner	Jurisdiction	Road Type	Status	Alt 2	Alt 3	Alt 4	Alt 5	Miles
502142500	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.47
502143000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.15
50218	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	7.38
50218	PVT	FS	NFSR	Open	No Change	No Change	No Change	No Change	1.74
502182000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.29
502183000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.97
502183000T1	FS	FS	NA	NA	New Temp Road	New Temp Road	New Temp Road	New Temp Road	0.39
502183000T2	FS	FS	NA	NA	New Temp Road	New Temp Road	New Temp Road	New Temp Road	0.56
502183500	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Add to System	Add to System	0.22
502183500	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	2.99
502183510	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.09
502183520	FS	FS	Unauthorized	Unauthorized	Outslope 20%	Outslope 20%	Outslope 20%	Outslope 20%	0.21
502183540	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.24
502183545	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.30
502183550	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.14
502183560	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.87
502183565	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.06
502183570	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Add to System	Add to System	0.53
502183570	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.10
502183580	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.85
502183590	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.14
502184000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.67
502184500	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.10
502185000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.48
502185010	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.11
502185020	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.15
502186010	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.13
502187000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Add to System	Add to System	0.05
502187000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	1.21
502187010	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Add to System	Add to System	0.53
502187010T	FS	FS	NA	NA	New Temp Road	New Temp Road	New Temp Road	New Temp Road	0.45
502188000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.38
502188000	PVT	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.05
502189020	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.13
502189028	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.21
502189080	FS	FS	Unauthorized	Unauthorized	Unauthorized	Unauthorized	Unauthorized	Unauthorized	0.62
50219	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.45
50223	FS	FS	NFSR	Closed	LTC	LTC	LTC	LTC	1.51

Rd Number	Owner	Jurisdiction	Road Type	Status	Alt 2	Alt 3	Alt 4	Alt 5	Miles
50225	FS	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.22
50225	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.32
502251000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.63
502251010	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.27
502251020	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.20
502252000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.11
50233	FS	FS	NFSR	Closed	Implement BMPs	Implement BMPs	Implement BMPs	Implement BMPs	0.15
50233	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.94
50233	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	1.80
50233	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	1.55
50233	PVT	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.60
502332000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.05
502332100	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.08
502333000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.23
502336000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.23
502337000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.21
50240	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.89
50240	FS	FS	NFSR	Closed	Implement BMPs	Implement BMPs	Implement BMPs	Implement BMPs	1.61
502401000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.60
502401500	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	1.36
50243	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	2.51
502430001T	FS	FS	NA	NA	New Temp Road	NA	New Temp Road	New Temp Road	1.61
502435500	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.15
502435600	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.19
50245	FS	FS	NFSR	Open	Reconstruction	Reconstruction	Reconstruction	Reconstruction	5.05
502450500	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.19
502452000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.59
502453000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.04
502455500	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.14
50249	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.87
50249	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.50
50256	FS	FS	NFSR	Closed	Full Recont.-PC	Full Recont.-PC	Full Recont.-PC	Full Recont.-PC	0.56
50258	FS	FS	NFSR	Closed	Full Recont.-PC	Full Recont.-PC	Full Recont.-PC	Full Recont.-PC	0.72
502581000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.63
50261	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.06
50261	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.43
50261	PVT	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.64
50266	FS	FS	NFSR	Seasonal	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.76

Rd Number	Owner	Jurisdiction	Road Type	Status	Alt 2	Alt 3	Alt 4	Alt 5	Miles
50266	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.03
502661000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.27
50270	FS	FS	NFSR	Seasonal	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.12
50270	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.20
50277	FS	FS	NFSR	Closed	Implement BMPs	Implement BMPs	Implement BMPs	Implement BMPs	0.61
502772000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.05
50288	FS	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.57
50288	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	1.33
502881000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.09
502881010	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.09
502881010	PVT	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.00
50293	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.43
50293	PVT	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.57
50295	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.34
50295	FS	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.02
50295	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.27
50295	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.20
503142000	FS	FS	Unauthorized	Unauthorized	Unauthorized	Unauthorized	Unauthorized	Unauthorized	0.13
50317	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.22
50436	FS	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.36
50436	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.19
50482	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.52
50482	FS	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.34
504821000	FS	FS	Unauthorized	Unauthorized	Unauthorized	Unauthorized	Unauthorized	Unauthorized	0.12
504822000	FS	FS	Unauthorized	Unauthorized	Unauthorized	Unauthorized	Unauthorized	Unauthorized	0.15
50485	FS	FS	NFSR	Closed	Full Recont.-PC	Full Recont.-PC	Full Recont.-PC	Full Recont.-PC	0.76
50485	FS	FS	NFSR	Closed	LTC	Full Recontour	LTC	LTC	1.36
504853000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.12
50489	FS	FS	NFSR	Closed	Full Recont.-PC	Full Recont.-PC	Full Recont.-PC	Full Recont.-PC	1.76
50489R	FS	FS	NA	NA	Realignment	NA	Realignment	Realignment-LTC	0.70
50491	FS	FS	NFSR	Closed	LTC	LTC	LTC	LTC	2.44
504911000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.14
504912000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.18
504913000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.34
50493	FS	FS	NFSR	Closed	LTC	LTC	LTC	LTC	3.31
50493	FS	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.41
50493	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.59
504931000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.13

Rd Number	Owner	Jurisdiction	Road Type	Status	Alt 2	Alt 3	Alt 4	Alt 5	Miles
504932000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.14
504932500	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.23
504934000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.35
504935000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.05
504936000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.11
504937000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.17
50496	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.66
504961000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.46
50498	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.05
50512	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.65
50521	FS	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	3.10
50521	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	2.40
505211500	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.09
505212000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.16
505213000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.02
505214000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.13
50538	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.17
50550	FS	FS	NFSR	Closed	LTC	LTC	LTC	LTC	0.10
50551	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	2.00
50551	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.69
50552	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.29
50553	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.32
50554	PVT	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.26
50555	FS	FS	NFSR	Closed	Implement BMPs	Implement BMPs	Implement BMPs	Implement BMPs	0.14
50555	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.10
50566	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.24
50566	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	2.52
50566	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	1.19
505661000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.15
505661010	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.47
505663000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.57
505663030	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.23
505665000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.91
50566R	FS	FS	NA	NA	Realignment	NA	Realignment	Realignment	0.22
50567	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.63
50567	PVT	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.39
505671000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.38
50574	FS	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.21

Rd Number	Owner	Jurisdiction	Road Type	Status	Alt 2	Alt 3	Alt 4	Alt 5	Miles
50574	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.15
50589	FS	Private	Private	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	1.13
505891000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.10
505891100	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.07
505891120	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.06
505891123	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.02
505891130	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.33
505891131	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.06
505891132	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.16
505891133	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.08
505891610	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.02
50591	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	1.37
50591	PVT	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.36
50591	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	2.21
50591	PVT	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.88
505911000	FS	FS	Unauthorized	Unauthorized	Outslope 20%	Outslope 20%	Outslope 20%	Outslope 20%	0.75
505911010	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.17
505911040	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.11
50593	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.31
50593	PVT	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.56
505938000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.48
50620	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	1.98
506202000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	1.25
50677	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.27
50677	FS	FS	NFSR	Closed	Outslope 20%	Outslope 20%	Outslope 20%	Outslope 20%	0.74
506771010	FS	Private	Private	Private	Private	Private	Private	Private	0.03
50692	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	1.88
50692	PVT	FS	NFSR	Open	No Change	No Change	No Change	No Change	1.32
50692	PVT	FS	NFSR	Open	Reconstruction	Reconstruction	Reconstruction	Reconstruction	1.19
506922000	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.01
50701	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	2.21
50701	PVT	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.87
507012000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.23
507012100	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.15
50702	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.14
50702	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.28
50703	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.38
50703	PVT	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.00

Rd Number	Owner	Jurisdiction	Road Type	Status	Alt 2	Alt 3	Alt 4	Alt 5	Miles
50704	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.10
50704	PVT	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.19
507041000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.06
50705	FS	FS	NFSR	Closed	Implement BMPs	Implement BMPs	Implement BMPs	Implement BMPs	0.22
50705	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.23
50706	FS	FS	NFSR	Open	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.48
507061000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.26
50707	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.47
50707	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.07
50707R	FS	FS	NA	NA	Realignment	NA	Realignment	Realignment	0.43
50708	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.47
507630001T	FS	FS	NA	NA	NA	NA	New Temp Road	NA?	0.61
50798	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.49
50798	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.03
50798	FS	Private	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.08
50849	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.23
50849	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.24
50849	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.01
509151000	FS	FS	Unauthorized	Unauthorized	Unauthorized	Unauthorized	Unauthorized	Unauthorized	0.23
51054	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.43
51054	FS	FS	NFSR	Open	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.08
510542000	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	1.42
510542050	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.28
510542051	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.43
510542100	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.14
510542200	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.11
51142	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.09
51143	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.15
51144	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.95
51144	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.01
51297	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.81
51298	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	1.26
512981000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.14
512982000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Add to System	Add to System	0.35
512982000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	1.03
51299	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.15
51301	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	2.76
51301	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.52

Rd Number	Owner	Jurisdiction	Road Type	Status	Alt 2	Alt 3	Alt 4	Alt 5	Miles
513016000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.62
51302	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.14
51302	PVT	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.42
513022000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.10
51302R	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.15
51305	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	2.30
51305	FS	FS	NA	NA	New Temp Road	New Temp Road	Realignment	New Temp Road	0.57
51305	FS	FS	NFSR	Closed	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.95
513059000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.18
51306	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.58
513061000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Add to System	Add to System	0.05
513061010	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Add to System	Add to System	0.19
513061010	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.25
513061020	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Add to System	Add to System	0.34
513061020	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.05
513061030	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.07
51306R	FS	FS	NA	NA	NA	NA	Realignment	Realignment-LTC	0.19
51517	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.83
51517	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.33
51538	FS	FS	NFSR	Closed	Implement BMPs	Implement BMPs	Implement BMPs	Implement BMPs	0.63
51538	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.18
515388000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.24
51540	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.28
51541	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.58
51541	FS	FS	NFSR	Closed	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.11
51547	FS	FS	NFSR	Closed	LTC	Full Recontour	LTC	LTC	0.85
51547R	FS	FS	NA	NA	Realignment	NA	Realignment	Realignment-LTC	0.53
51549	FS	FS	NFSR	Closed	Full Recont.-PC	Full recont.-pc	Full Recont.-PC	Full Recont.-PC	0.30
51582	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.80
51582	PVT	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.35
515822500	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.17
515823000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.11
515824000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.43
515824100	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.59
515824110	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.10
515852000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.52
51587	FS	FS	NFSR	Closed	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.19

Rd Number	Owner	Jurisdiction	Road Type	Status	Alt 2	Alt 3	Alt 4	Alt 5	Miles
51763	FS	FS	NFSR	Open	Convert to Trail	Convert to Trail	Convert to Trail	Convert to Trail	3.37
51763	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	4.37
517631010	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.08
517631011	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.14
517632000	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.09
517635000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.11
51782P	FS	FS	NA	NA	New Temp Road	New Temp Road	New Temp Road	New Temp Road	0.27
51782P	PVT	FS	NA	NA	New Temp Road	New Temp Road	New Temp Road	New Temp Road	0.08
51783P	FS	FS	NA	NA	New Temp Road	New Temp Road	New Temp Road	New Temp Road	0.03
51783P	PVT	FS	NA	NA	New Temp Road	New Temp Road	New Temp Road	New Temp Road	0.07
51784	FS	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.61
51784	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.20
51785	PVT	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.83
517851000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.14
51786	PVT	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.05
51787	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.19
51787	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.01
51787	PVT	Private	NFSR	Closed	No Change	No Change	No Change	No Change	0.17
51787P	FS	FS	NA	NA	New Temp Road	New Temp Road	New Temp Road	New Temp Road	0.76
51788	PVT	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.14
51789	FS	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.42
51789	PVT	FS	NFSR	Seasonal	No Change	No Change	No Change	No Change	0.32
51790	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.29
51791	PVT	Private	NFSR	Closed	No Change	No Change	No Change	No Change	0.45
51791R	FS	FS	NA	NA	Realignment	NA	Realignment	Realignment	0.29
51791R	PVT	FS	NA	NA	Realignment	NA	Realignment	Realignment	0.03
51792	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.04
51792	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.39
51793	FS	FS	NFSR	Closed	Implement BMPs	Implement BMPs	Implement BMPs	Implement BMPs	0.24
51793	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.12
51794	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.18
51795	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.23
51795	PVT	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.88
51796	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.57
51814	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	2.10
518140001T	FS	FS	NA	NA	New Temp Road	New Temp Road	New Temp Road	New Temp Road	0.52
518141001	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.07
518141002	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.56

Rd Number	Owner	Jurisdiction	Road Type	Status	Alt 2	Alt 3	Alt 4	Alt 5	Miles
518141002T	FS	FS	NA	NA	New Temp Road	New Temp Road	New Temp Road	New Temp Road	1.19
518141003	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.33
518141005	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.12
51817	FS	FS	NFSR	Closed	Implement BMPs	Implement BMPs	Implement BMPs	Implement BMPs	0.16
51818	FS	FS	NFSR	Closed	LTC	LTC	LTC	LTC	1.63
51819	FS	FS	NFSR	Closed	LTC	LTC	LTC	LTC	0.51
51890	FS	FS	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.15
51895	FS	FS	NFSR	Closed	Outslope 20%	Outslope 20%	Outslope 20%	Outslope 20%	0.35
51896	FS	FS	NFSR	Closed	Outslope 20%	Outslope 20%	Outslope 20%	Outslope 20%	0.19
51899	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.84
51933	FS	FS	NFSR	Closed	No Change	No Change	No Change	No Change	0.09
52001	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.11
52001P	FS	FS	NA	NA	New Temp Road	New Temp Road	Realignment	Realignment-LTC	0.19
52002	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.19
52002P	FS	FS	NA	NA	New Temp Road	New Temp Road	Realignment	Realignment-LTC	0.11
52003P	FS	FS	NA	NA	New Temp Road	New Temp Road	Realignment	Realignment-LTC	0.45
52004P	FS	FS	NA	NA	New Temp Road	New Temp Road	Realignment	Realignment-LTC	0.50
52005P	FS	FS	NA	NA	New Temp Road	New Temp Road	Realignment	Realignment-LTC	0.16
52006P	FS	FS	NA	NA	New Temp Road	New Temp Road	New Temp Road	New Temp Road	0.36
52007P	FS	FS	NA	NA	New Temp Road	New Temp Road	New Temp Road	New Temp Road	1.23
58008	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.08
58009	FS	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.11
58009	PVT	FS	NFSR	Open	No Change	No Change	No Change	No Change	0.04
58010	FS	Private	NFSR	Closed	No Change	No Change	No Change	No Change	0.02
58011	PVT	Private	NFSR	Closed	No Change	No Change	No Change	No Change	0.16
58011	FS	Private	NFSR	Closed	OM L1 to L2	OM L1 to L2	OM L1 to L2	OM L1 to L2	0.04
58012	FS	Private	NFSR	Closed	No Change	No Change	No Change	No Change	0.01
BC10	FS	Private	Undetermined	Private	Undetermined	Undetermined	Undetermined	Undetermined	0.00
BC109	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.09
BC110	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.01
BC113	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.06
BC114	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.03
BC1262	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.02
BC135	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.06
BC16	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.01
BC179	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.02
BC28	FS	Private	Private	Private	Private	Private	Private	Private	0.02
BC431	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.02

Rd Number	Owner	Jurisdiction	Road Type	Status	Alt 2	Alt 3	Alt 4	Alt 5	Miles
BC53	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.07
BC56	FS	FS	Unauthorized	Unauthorized	Spot Treatment	Spot Treatment	Spot Treatment	Spot Treatment	0.09
BC57	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.09
BC71	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.02
BC8	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.01
BC92	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.13

Table 2: Roads that are outside the Project area but associated with the road network inside the Project. These are on the ridgetops adjacent to the Project area and the roads weave in and out of the Project.

Rd number	Owner	Jurisdiction	Road type	Status	Alt 2	Alt 3	Alt 4	Alt 5	Miles
51763	FS	FS	NFSR	Open	Convert to trail	Convert to trail	Convert to trail	Convert to trail	1.11
502183000	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.05
502189028	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.19
510542000	FS	FS	Unauthorized	Unauthorized	Spot treatment	Spot treatment	Spot treatment	Spot treatment	0.63
517631010	FS	FS	Unauthorized	Unauthorized	Full recontour	Full recontour	Full recontour	Full recontour	0.08
517631011	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.01
517635000	FS	FS	Unauthorized	Unauthorized	Full Recontour	Full Recontour	Full Recontour	Full Recontour	0.04
50186G	FS	FS	NFSR	Open	No Change	Full Recontour	No Change	No Change	0.51

Appendix 3
Cumulative Effects

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Cumulative Effects

Past, Present, and Reasonably Foreseeable Activities

Past, present, and reasonably foreseeable activities listed below are activities and natural events which are known to have already occurred, are currently occurring, or are likely to occur in the vicinity of the Middle Fork Weiser River Landscape Assessment Project (Project) and may contribute cumulative effects in future proposed actions. The area encompassing these activities and events includes the Council Ranger District on the Payette National Forest (Forest), State lands, and private property unless otherwise stated.

Past and present activities and natural events have contributed to the existing condition as described in the Existing Condition sections of Chapter 3 of the Project environmental impact statement. These activities, and reasonably foreseeable activities, may affect resources relevant to actions that are expected following the Landscape Assessment. Therefore, past, present, and reasonably foreseeable activities have been considered in the cumulative effects analysis for each resource area.

Activities listed as reasonable and foreseeable were gleaned from the Forest's quarterly Schedule of Proposed Actions (SOPA) and from interviewing Forest program managers. All relevant projects listed are likely to occur, based on the SOPA, and are displayed in Table 3.

Created to be as comprehensive as possible, this list may unintentionally omit activities due to lack of records or knowledge. The list is intended to demonstrate that relevant past, present, and reasonably foreseeable activities are identified and considered in the analysis of cumulative effects. However, activities listed cannot stand alone and must be supported with cumulative effects analysis by resource area in the "Effects" discussion of Chapter 3 of the Landscape Assessment.

Because cumulative effects vary in time and space, each resource area has specified a pertinent cumulative effects analysis area in their discussion. To ensure the appropriate past, present, and reasonably foreseeable actions are considered, each resource area addressed all listed activities in the "Environmental Effects" discussion and disclosed why or why not a specific activity, or type of activity, would contribute to cumulative effects, and what those effects might be.

Areas considered for cumulative effects are contained in the following 6th level Hydrologic Unit Codes (HUCs) east of the Weiser River:

- Granite Creek—Middle Fork Weiser River
- Mica Creek—Middle Fork Weiser River
- Jungle Creek—Middle Fork Weiser River
- Little Fall Creek—Middle Fork Weiser River
- A portion of East Fork Weiser River in the Upper East Fork Drainage

This cumulative effects analysis area encompasses 57,820 acres, of which 47,817 acres are within the National Forest boundary (Table 1, Figure 1, and Figure 2).

Past Harvest in Cumulative Effects Analysis Area

Existing GIS data for past timber harvest in the Cumulative Effects Analysis Area are given in acres by decade in Table 1 and Table 2, and shown in Figure 1 and Figure 2. Detailed records of pre-1960 timber harvest in the area are not available.

There is a record of 9,816 acres of harvest on National Forest Lands and 8,495 acres of harvest on private lands within the Project. The GIS data includes areas that were entered more than once, so total acreage in the past harvest history exceeds the totals above.

Table 1. Summary of Harvest Acreage by Owner, Method, and Decade

Owner	Harvest Method	Decade	Acreage
National Forest System lands	Cable	1990	3
		2000	15
	Cable Total		**18**
	Helicopter	1980	53
		1990	88
		2000	837
	Helicopter Total		**978**
	Jammer	2000	1262
	Jammer Total		**1262**
	Pickup	2000	14
	Pickup Total		**14**
	Single-Span Sky	1970	28
		1980	119
		1990	174
		2000	269
	Single-Span Sky Total		**590**
	Tractor	1960	3388
		1970	2099
		1980	1476
		1990	1872
		2000	171
		2010	146
	Tractor Total		**9151**
	Unknown	1970	7
	Unknown Total		**7**
Forest Service Total			**12021**
Private	Tractor	1990	4797
		2000	3698
	Tractor Total		**8495**
Private Total			**8495**
Grand Total			**20515**

Table 2. Harvest Method by Stand

Harvest Year	Sale Name	Harvest Method	Stand Label	Acres
1963	GRANITE CR SALV	Tractor	120	12
1963	GRANITE CR SALV	Tractor	122	20

Harvest Year	Sale Name	Harvest Method	Stand Label	Acres
1963	GRANITE CR SALV	Tractor	124	6
1963	GRANITE CR SALV	Tractor	125	32
1963	GRANITE CR SALV	Tractor	126	11
1964	CABIN CREEK	Tractor	317	11
1964	CABIN CREEK	Tractor	318	18
1964	CABIN CREEK 1	Tractor	227	168
1964	CABIN CREEK 2&4	Tractor	233	35
1964	CABIN CREEK 3	Tractor	319	26
1964	CABIN CREEK 4	Tractor	237	73
1964	CABIN CREEK 5	Tractor	234	12
1964	CABIN CREEK 5	Tractor	235	23
1964	CABIN CREEK 5	Tractor	236	11
1964	CABIN CREEK 5	Tractor	238	14
1964	CABIN CREEK 5	Tractor	239	5
1964	CABIN CREEK 5	Tractor	316	32
1964	CABIN CREEK 6	Tractor	225	29
1964	CABIN CREEK 6	Tractor	226	50
1964	CABIN CREEK 6	Tractor	230	8
1964	CABIN CREEK 6	Tractor	231	15
1964	CABIN CREEK 6	Tractor	232	15
1964	CABIN CREEK?	Tractor	326	8
1964	CABIN CREEK?	Tractor	327	20
1964	CABIN CREEK?	Tractor	331	36
1964	CABIN CREEK?	Tractor	336	8
1964	CABIN CREEK?	Tractor	337	3
1964	CABIN CREEK?	Tractor	338	11
1964	GRANITE CR SALV	Tractor	121	11
1964	GRANITE CR SALV	Tractor	123	9
1965	DEWEY CREEK	Tractor	263	0
1965	DEWEY CREEK	Tractor	264	0
1965	DEWEY CREEK	Tractor	265	0
1965	DEWEY CREEK 53	Tractor	266	1
1967	BEAR GAP 1	Tractor	259	288
1967	BEAR GAP 10	Tractor	258	21
1967	BEAR GAP 2	Tractor	310	48
1967	BEAR GAP 3	Tractor	262	24
1967	BEAR GAP 3	Tractor	311	30
1967	BEAR GAP 5	Tractor	260	36
1967	BEAR GAP 5	Tractor	261	40
1967	BEAR GAP 6-8	Tractor	340	80
1967	BEAR GAP 9	Tractor	334	19
1967	BEAR GAP 9	Tractor	335	19
1967	BLUE BUNCH 07	Tractor	127	8
1967	COUNCIL MTN 01	Tractor	268	32
1967	COUNCIL MTN 01	Tractor	320	8
1967	COUNCIL MTN 01	Tractor	321	10
1967	COUNCIL MTN 02	Tractor	272	11
1967	COUNCIL MTN 03	Tractor	269	13
1967	COUNCIL MTN 04	Tractor	270	24

Harvest Year	Sale Name	Harvest Method	Stand Label	Acres
1967	COUNCIL MTN 05	Tractor	271	11
1967	COUNCIL MTN 06	Tractor	306	11
1967	COUNCIL MTN 07	Tractor	275	18
1967	COUNCIL MTN 07	Tractor	276	5
1967	COUNCIL MTN 08	Tractor	279	27
1967	COUNCIL MTN 09	Tractor	281	17
1967	COUNCIL MTN 09	Tractor	282	48
1967	COUNCIL MTN 09	Tractor	283	23
1967	COUNCIL MTN 09	Tractor	285	26
1967	COUNCIL MTN 09	Tractor	286	31
1967	COUNCIL MTN 09	Tractor	287	63
1967	COUNCIL MTN 09	Tractor	322	6
1967	COUNCIL MTN 09	Tractor	323	7
1967	COUNCIL MTN 09	Tractor	324	4
1967	COUNCIL MTN 10	Tractor	277	26
1967	COUNCIL MTN 11	Tractor	288	20
1967	COUNCIL MTN 19	Tractor	278	17
1967	COUNCIL MTN 20	Tractor	273	1
1967	COUNCIL MTN 20	Tractor	274	4
1967	COUNCIL MTN 20	Tractor	307	8
1967	COUNCIL MTN 9A	Tractor	280	14
1967	COUNCIL MTN 9A	Tractor	284	34
1967	Isolated 160 01	Tractor	546	20
1967	Isolated 160 2&3	Tractor	544	75
1967	Isolated 160 3&4	Tractor	545	38
1967	COUNCIL MTN 14	Tractor	558	26
1967	COUNCIL MTN 15	Tractor	559	9
1968	BEAR GAP 2N	Tractor	247	75
1968	BEAR GAP 2N	Tractor	250	10
1968	BEAR GAP 2N	Tractor	252	6
1968	BEAR GAP 2N	Tractor	255	5
1968	BEAR GAP 4N	Tractor	309	28
1968	Isolated 160?	Tractor	547	173
1968	Isolated 160?	Tractor	548	56
1968	JUNGLE CR	Tractor	453	17
1968	JUNGLE CR	Tractor	491	89
1968	JUNGLE CR 01	Tractor	444	41
1968	JUNGLE CR 02	Tractor	452	33
1968	JUNGLE CR 03	Tractor	445	21
1968	JUNGLE CR 03	Tractor	446	6
1968	JUNGLE CR 03	Tractor	447	24
1968	JUNGLE CR 04	Tractor	448	21
1968	JUNGLE CR 05	Tractor	449	34
1968	JUNGLE CR 06	Tractor	450	7
1968	JUNGLE CR 10	Tractor	489	29
1968	JUNGLE CR 10	Tractor	490	9
1968	JUNGLE CR 11	Tractor	454	37
1968	JUNGLE CR 12	Tractor	455	50
1969	BEAR GAP 1N	Tractor	243	102

Harvest Year	Sale Name	Harvest Method	Stand Label	Acres
1969	BEAR GAP 1N	Tractor	245	31
1969	BEAR GAP 1N	Tractor	246	49
1969	BEAR GAP 1N	Tractor	248	50
1969	BEAR GAP 1N	Tractor	249	7
1969	BEAR GAP 1N	Tractor	251	34
1969	BEAR GAP 1N	Tractor	253	14
1969	BEAR GAP 1N	Tractor	254	32
1969	BEAR GAP 1N	Tractor	256	19
1969	BEAR GAP 1N	Tractor	257	58
1969	BEAR GAP 1N	Tractor	330	8
1969	BEAR GAP 1N	Tractor	342	10
1969	BEAR GAP 1N	Tractor	343	3
1969	BEAR GAP 3N	Tractor	328	12
1969	BEAR GAP 3N	Tractor	329	5
1969	BEAR GAP 4	Tractor	333	120
1969	BEAR GAP 4	Tractor	339	3
1969	COUNCIL MTN 12	Tractor	290	8
1969	COUNCIL MTN 13	Tractor	289	6
1969	DEWEY CREEK 16	Tractor	510	0
1969	DEWEY CREEK 16	Tractor	511	1
1969	DEWEY CREEK 16	Tractor	528	12
1970	JUNGLE CR 06	Tractor	456	51
1970	JUNGLE CR 07	Tractor	457	38
1970	JUNGLE CR 08	Tractor	458	16
1970	JUNGLE CR 09	Tractor	459	23
1970	NO BUSINESS	Tractor	436	30
1970	NO BUSINESS	Tractor	437	42
1970	NO BUSINESS	Tractor	442	11
1970	NO BUSINESS 05	Tractor	419	22
1970	NO BUSINESS 09	Tractor	421	20
1970	NO BUSINESS 10	Tractor	422	30
1970	NO BUSINESS 11	Tractor	345	17
1970	NO BUSINESS 11	Tractor	438	25
1970	NO BUSINESS 12	Tractor	430	37
1970	NO BUSINESS 13	Tractor	432	16
1970	NO BUSINESS 13	Tractor	433	20
1970	NO BUSINESS 13	Tractor	443	10
1970	NO BUSINESS L	Tractor	434	22
1970	NO BUSINESS L	Tractor	435	60
1971	NO BUSINESS 01	Tractor	418	5
1971	NO BUSINESS 02	Tractor	344	14
1971	NO BUSINESS 03	Tractor	423	30
1971	NO BUSINESS 03	Tractor	425	9
1971	NO BUSINESS 03	Tractor	440	12
1971	NO BUSINESS 04	Tractor	424	17
1971	NO BUSINESS 06	Tractor	426	24
1971	NO BUSINESS 06	Tractor	427	13
1971	NO BUSINESS 06	Tractor	439	16
1971	NO BUSINESS 06	Tractor	441	6
1971	NO BUSINESS 07	Tractor	428	13
1971	NO BUSINESS 08	Tractor	420	28
1971	NO BUSINESS 12	Tractor	431	6
1972	JUNGLE CR	Tractor	451	84
1972	NO BUSINESS 12	Tractor	429	29

Harvest Year	Sale Name	Harvest Method	Stand Label	Acres
1975	BLUE BUNCH SALVAGE	Tractor	267	2
1976	CORRAL CREEK 01	Tractor	244	45
1976	CORRAL CREEK 02	Tractor	240	87
1976	CORRAL CREEK 03	Tractor	220	11
1976	CORRAL CREEK 04	Tractor	221	27
1976	CORRAL CREEK 06	Tractor	224	40
1976	CORRAL CREEK 07	Tractor	241	21
1976	CORRAL CREEK 08	Tractor	228	12
1976	CORRAL CREEK 09	Tractor	332	32
1976	CORRAL CREEK 10	Tractor	223	5
1976	CORRAL CREEK 11	Tractor	222	28
1976	CORRAL CREEK 12	Tractor	219	44
1976	SUGARLOAF 1	Single-Span Sky	513	28
1976	SUGARLOAF 2&3	Tractor	514	38
1976	SUGARLOAF 2&3	Tractor	555	16
1976	SUGARLOAF 4	Tractor	512	50
1976	SUGARLOAF 5	Tractor	515	8
1976	SUGARLOAF 6	Tractor	516	93
1976	SUGARLOAF 6	Tractor	517	12
1976	SUGARLOAF 7	Tractor	519	36
1976	SUGARLOAF 8	Tractor	518	34
1976	SUGARLOAF 9	Tractor	553	20
1977	CATAMARAN 1	Tractor	464	70
1977	CATAMARAN 2	Tractor	461	43
1977	CATAMARAN 3	Tractor	462	28
1977	CATAMARAN 4	Tractor	460	16
1977	CATAMARAN 5	Tractor	488	66
1977	CATAMARAN 6	Tractor	463	15
1977	CATAMARAN 7	Tractor	472	13
1977	CATAMARAN 7	Tractor	473	3
1977	CATAMARAN?	Tractor	465	84
1977	CATAMARAN?	Tractor	466	36
1977	CATAMARAN?	Tractor	474	8
1977	CATAMARAN?	Tractor	475	13
1977	CATAMARAN?	Tractor	480	13
1977	CATAMARAN?	Tractor	497	8
1977	CORRAL CR SALV 1	Tractor	308	27
1977	CORRAL CREEK 05	Tractor	218	67
1977	MICA SADDLE 2&3	Tractor	314	57
1977	MICA SADDLE 4	Tractor	315	76
1977	UNKNOWN	(blank)	325	7
1982	MIDDLE FORK	Tractor	471	25
1982	MIDDLE FORK 01	Tractor	353	29
1982	MIDDLE FORK 03	Tractor	354	35
1982	MIDDLE FORK 09	Tractor	355	8
1982	MIDDLE FORK 2&11	Tractor	352	24
1983	DESERET 03	Tractor	501	2
1983	DESERET 04	Tractor	502	4
1983	DESERET 05	Tractor	503	16
1983	DESERET 10	Tractor	504	27
1983	DESERET 11	Tractor	534	39
1983	DESERET 11	Tractor	535	22
1983	DESERET 12	Tractor	533	29
1983	DESERET 13	Tractor	536	17
1983	DESERET 13	Tractor	537	4
1983	DESERET 14	Tractor	531	28
1983	DESERET 15	Tractor	532	14
1983	DESERET 16	Tractor	530	4

Harvest Year	Sale Name	Harvest Method	Stand Label	Acres
1983	DESERET 17	Tractor	529	6
1983	DESERET 18	Tractor	507	8
1983	DESERET 19	Tractor	506	6
1983	DESERET 20	Tractor	508	3
1983	DESERET 21	Tractor	509	5
1983	MIDDLE FORK 10&14	Tractor	351	46
1984	DESERET 01	Tractor	538	34
1984	DESERET 01	Tractor	539	8
1984	DESERET 01	Tractor	540	16
1984	DESERET 01	Tractor	541	6
1984	DESERET 01	Tractor	542	39
1984	DESERET 02	Tractor	500	5
1984	DESERET 06	Tractor	543	7
1984	DESERET 06	Tractor	563	8
1984	DESERET 07	Tractor	505	1
1984	DESERET 07	Tractor	560	12
1984	MIDDLE FORK 04	Tractor	356	33
1984	MIDDLE FORK 12	Tractor	349	24
1984	MIDDLE FORK 12	Tractor	350	56
1984	MIDDLE FORK 13	Tractor	469	12
1984	MIDDLE FORK 13	Tractor	470	9
1984	MIDDLE FORK 16	Tractor	348	28
1984	MIDDLE FORK 17	Tractor	467	3
1984	MIDDLE FORK 17	Tractor	468	3
1984	MIDDLE FORK 18	Tractor	346	39
1984	MIDDLE FORK 18	Tractor	347	109
1984	MIDDLE FORK 5-8	Tractor	357	9
1984	DESERET 08	Tractor	561	4
1984	DESERET 09	Tractor	562	11
1986	HUBBARD BASIN 306	Tractor	408	38
1988	HUBBARD BASIN 851	Tractor	477	6
1988	HUBBARD BASIN 851	Tractor	478	2
1988	HUBBARD BASIN 851	Tractor	479	8
1988	MIDDLE FORK SPRUCE	Tractor	303	51
1988	MIDDLE FORK SPRUCE	Tractor	304	14
1988	MIDDLE FORK SPRUCE	Tractor	341	6
1989	GREEN RANCH B 450	Tractor	381	3
1989	GREEN RANCH B 516	Tractor	382	0
1989	GRN RANCH E HELI 1	Helicopter	369	22
1989	GRN RNCH C SS 11A	Helicopter	360	30
1989	HUBBARD BASIN 255	Tractor	415	22
1989	HUBBARD BASIN 256	Single-Span Sky	417	27
1989	HUBBARD BASIN 306	Tractor	401	115
1989	HUBBARD BASIN 306	Tractor	402	16
1989	HUBBARD BASIN 350	Tractor	409	15
1989	HUBBARD BASIN 351	Tractor	412	26
1989	HUBBARD BASIN 353	Tractor	414	15
1989	HUBBARD BASIN 354	Single-Span Sky	416	9
1989	HUBBARD BASIN 354	Single-Span Sky	492	30
1989	HUBBARD BASIN 403	Tractor	405	17
1989	HUBBARD BASIN 450	Tractor	400	40
1989	HUBBARD BASIN 451	Tractor	399	9
1989	HUBBARD BASIN 452	Tractor	404	54
1989	HUBBARD BASIN 453	Tractor	406	28
1989	HUBBARD BASIN 651	Tractor	403	18
1989	HUBBARD BASIN 6750	Single-Span Sky	413	19
1989	HUBBARD BASIN 6751	Single-Span Sky	407	13
1989	HUBBARD BASIN 6751	Single-Span Sky	410	20

Harvest Year	Sale Name	Harvest Method	Stand Label	Acres
1989	HUBBARD BASIN 753	Tractor	397	27
1989	HUBBARD BASIN 753	Tractor	398	27
1989	HUBBARD BASIN 754	Tractor	396	31
1989	MIDDLE FORK SPRUCE	Tractor	305	9
1990	CABIN CR SALV 1	Tractor	524	33
1990	CABIN CR SALV 1A	Tractor	525	24
1990	CABIN CR SALV 1C	Tractor	526	17
1990	GREEN RANCH A 1	Tractor	380	15
1990	GREEN RANCH A 10	Tractor	365	24
1990	GREEN RANCH A 11	Tractor	494	22
1990	GREEN RANCH A 12	Single-Span Sky	364	29
1990	GREEN RANCH A 12A	Tractor	366	17
1990	GREEN RANCH A 16	Tractor	378	21
1990	GREEN RANCH A 17	Tractor	376	35
1990	GREEN RANCH A 2	Tractor	498	15
1990	GREEN RANCH A 21	Tractor	495	32
1990	GREEN RANCH A 21	Tractor	496	19
1990	GREEN RANCH A 4	Tractor	499	22
1990	GREEN RANCH A 5	Tractor	379	32
1990	GREEN RANCH A 6	Tractor	375	16
1990	GREEN RANCH A 7	Tractor	372	35
1990	GREEN RANCH A 8	Tractor	476	21
1990	GREEN RANCH A 9	Tractor	377	40
1990	GREEN RANCH D 1	Tractor	363	11
1990	GREEN RANCH D 2&3	Tractor	481	125
1990	GREEN RANCH D 5	Tractor	370	16
1990	GREEN RANCH D 5	Tractor	371	9
1990	GREEN RANCH D 6	Tractor	373	17
1990	GREEN RNCH A 14&15	Tractor	374	27
1990	GRN RANCH A13 & Z1	Tractor	493	48
1990	GRN RANCH Z SALV 2	Tractor	367	18
1990	GRNIT SQUAW SALV 6	Tractor	35	2
1990	GRNIT SQUAW SALV 7	Tractor	34	6
1990	HUBBARD BASIN 352	Tractor	411	21
1990	HUBBARD BASIN 850	Single-Span Sky	485	18
1990	HUBBARD BASIN 850	Single-Span Sky	486	3
1990	HUBBARD BASIN 850	Single-Span Sky	487	3
1990	PVT	Tractor	193	9
1990	PVT	Tractor	194	7
1990	PVT	Tractor	195	861
1990	PVT	Tractor	196	1433
1990	PVT	Tractor	197	97
1990	PVT	Tractor	198	483
1990	PVT	Tractor	199	11
1990	PVT	Tractor	200	7
1990	PVT	Tractor	201	19
1990	PVT	Tractor	202	23
1990	PVT	Tractor	203	1847
1990	SWING BOULDER SS 1	Tractor	291	12
1990	SWING BOULDER SS 2	Tractor	293	26
1990	SWING BOULDER SS 2	Tractor	294	5
1990	SWING BOULDER SS 3	Tractor	292	10
1991	BAR CREEK SALVAGE	Tractor	302	10
1991	BEAR GAP PULP SS 1	Tractor	358	10
1991	BEAR GAP PULP SS 1	Tractor	359	6
1991	BOULDER BAR S 2&7	Tractor	552	15
1991	BOULDER BAR SALV 1	Tractor	520	8
1991	BOULDER BAR SALV 1	Tractor	549	29

Harvest Year	Sale Name	Harvest Method	Stand Label	Acres
1991	BOULDER BAR SALV 2	Tractor	550	15
1991	BOULDER BAR SALV 3	Tractor	554	45
1991	BOULDER BAR SALV 4	Tractor	522	5
1991	BOULDER BAR SALV 4	Tractor	527	14
1991	BOULDER BAR SALV 5	Tractor	521	11
1991	BOULDER BAR SALV 5	Tractor	551	12
1991	BOULDER BAR SALV 6	Tractor	523	8
1991	E FK LOGEPOL SALV	Tractor	10	0
1991	GRAVL PIT FIRWD SS	Tractor	229	8
1991	GRNIT SQUAW SALV 3	Tractor	31	8
1991	GRNIT SQUAW SALV 4	Tractor	117	6
1991	GRNIT SQUAW SALV 5	Tractor	32	15
1991	GRNIT SQW 2 SAL 01	Tractor	217	22
1991	GRNIT SQW 2 SAL 03	Tractor	130	9
1991	GRNIT SQW 2 SAL 04	Tractor	118	8
1991	GRNIT SQW 2 SAL 06	Tractor	116	10
1991	GRNIT SQW 2 SAL 08	Tractor	131	10
1991	GRNIT SQW 2 SAL 10	Tractor	128	23
1991	GRNIT SQW 2 SAL 11	Tractor	129	8
1991	GRNIT SQW 2 SAL 4A	Tractor	119	16
1991	PINELOAF SALV 1	Tractor	384	14
1991	PINELOAF SALV 2	Tractor	383	5
1991	PINELOAF SALV 3	Tractor	388	6
1991	PINELOAF SALV 4	Tractor	385	2
1991	PINELOAF SALV 5	Tractor	387	3
1991	PINELOAF SALV 6	Tractor	386	3
1991	SKYLOAF SALV 1	Single-Span Sky	392	11
1991	SKYLOAF SALV 3	Tractor	395	5
1991	SKYLOAF SALV 4	Single-Span Sky	393	7
1991	WHITELICKS SALV 1	Single-Span Sky	301	7
1991	WHITELICKS SALV 3	Single-Span Sky	299	19
1991	WHITELICKS SALV 4	Tractor	298	9
1991	WHITELICKS SALV 6	Tractor	295	14
1991	WHITELICKS SALV 8	Tractor	300	6
1991	WHITELICKS SS 2&9	Tractor	297	39
1991	WHITELICKS SS 5&7	Single-Span Sky	296	24
1992	BEETLE RNDUP SS 1	Tractor	3	5
1992	BEETLE RNDUP SS 2	Tractor	5	5
1992	BEETLE RNDUP SS 3	Tractor	4	6
1992	BEETLE RNDUP SS 4	Tractor	2	30
1992	BEETLE RNDUP SS 5	Tractor	1	10
1992	GRN RNCH C SALV 7	Helicopter	482	6
1992	GRN RNCH C SALV 7	Helicopter	484	6
1992	GRN RNCH C SALV 7A	Helicopter	368	17
1992	GRN RNCH C SALV 8	Helicopter	483	9
1992	GRNIT SQUAW SALV 1	Tractor	33	3
1992	MICA SADDLE SALV 3	Tractor	148	14
1992	MICA SADDLE SALV 4	Tractor	150	15
1992	MICA SDLE SALV 1&2	Tractor	149	17
1992	SKYLOAF SALV 5	Tractor	391	7
1992	SKYLOAF SALV 6	Tractor	394	32
1992	SKYLOAF SALV 7	Tractor	389	18
1992	SKYLOAF SALV 8	Single-Span Sky	390	13
1992	SUGAR MEDLEY SALV	Tractor	362	4
1992	WONDERLOAF SALV 7	Tractor	242	9
1992	WONDERLOAF SALV 8	Tractor	313	12
1992	WONDERLOAF SALV 9	Tractor	312	2
1993	GRN RNCH C SALV 11	Helicopter	361	50

Harvest Year	Sale Name	Harvest Method	Stand Label	Acres
1994	No Business Jr	Tractor	104	6
1994	No Business Jr 01	Tractor	39	27
1994	No Business Jr 02	Tractor	38	14
1994	No Business Jr 03	Tractor	105	27
1994	No Business Jr 04	Tractor	106	8
1994	No Business Jr 5A	Tractor	36	10
1994	No Business Jr 5B	Tractor	37	12
1996	GRANITE CREEK 04	Tractor	133	6
1996	GRANITE CREEK 06	Tractor	134	7
1996	GRANITE CREEK 16	Tractor	556	17
1998	Granite Cr Fire	Tractor	135	8
1998	ISOLATED 40 CLNUP	Tractor	6	27
1998	ISOLATED 40 CLNUP	Tractor	146	13
1999	GRANITE CREEK 01	Tractor	11	29
1999	GRANITE CREEK 02	Single-Span Sky	12	6
1999	GRANITE CREEK 03	Tractor	13	24
1999	GRANITE CREEK 05	Cable	20	2
1999	GRANITE CREEK 11	Tractor	14	22
1999	GRANITE CREEK 13	Tractor	15	17
1999	GRANITE CREEK 13	Tractor	21	23
1999	GRANITE CREEK 14	Tractor	24	34
1999	GRANITE CREEK 15	Tractor	25	26
1999	GRANITE CREEK 17	Tractor	132	2
1999	GRANITE CREEK 18	Tractor	17	48
1999	GRANITE CREEK 20	Tractor	16	27
1999	GRANITE CREEK 20A	Single-Span Sky	30	10
1999	GRANITE CREEK 21	Tractor	23	8
1999	GRANITE CREEK 21A	Cable	19	1
1999	GRANITE CREEK 22	Single-Span Sky	18	1
1999	GRANITE CREEK 22	Single-Span Sky	27	4
1999	GRANITE CREEK 23	Single-Span Sky	26	14
1999	GRANITE CREEK 25	Single-Span Sky	29	5
1999	GRANITE CREEK 7&9	Tractor	22	4
1999	GRANITE CREEK 12	Tractor	557	8
2000	GRANITE CREEK 26	Tractor	28	18
2007	COUGAR BASIN 12	Tractor	8	0
2007	COUGAR BASIN 305	Tractor	9	0
2007	COUGAR BASIN 8	Tractor	7	0
2008	Grays Cr 320	Tractor	188	7
2008	Grays Cr 321A	Jammer	40	0
2008	Grays Cr 321B	Jammer	43	8
2008	Grays Cr 322	Jammer	142	2
2008	Grays Cr 322	Jammer	189	10
2008	Grays Cr 322	Jammer	190	11
2008	Grays Cr 323	Tractor	41	19
2008	Grays Cr 323	Tractor	99	6
2008	Grays Cr 323	Tractor	100	5
2008	Grays Cr 325	Single-Span Sky	98	9
2008	Grays Cr 326	Single-Span Sky	97	8
2008	Grays Cr 341	Cable	192	6
2008	Grays Cr 405	Pickup	151	10
2008	MF 001	Jammer	136	35
2008	MF 101	Jammer	57	141
2008	MF 102	Single-Span Sky	56	16
2008	MF 103	Helicopter	79	15
2008	MF 104	Jammer	67	27
2008	MF 104	Jammer	68	27
2008	MF 104	Jammer	69	17

Harvest Year	Sale Name	Harvest Method	Stand Label	Acres
2008	MF 104	Jammer	70	20
2008	MF 104	Jammer	71	31
2008	MF 104	Jammer	72	24
2008	MF 104	Jammer	73	28
2008	MF 104	Jammer	74	18
2008	MF 104	Jammer	75	36
2008	MF 104	Jammer	76	42
2008	MF 104	Jammer	83	20
2008	MF 104	Jammer	88	18
2008	MF 104	Jammer	152	7
2008	MF 104	Jammer	153	13
2008	MF 104	Jammer	162	42
2008	MF 104C	Jammer	64	5
2008	MF 105	Jammer	65	11
2008	MF 107	Jammer	62	16
2008	MF 108	Jammer	77	23
2008	MF 108	Jammer	85	14
2008	MF 108	Jammer	87	8
2008	MF 108	Jammer	159	35
2008	MF 111	Tractor	160	15
2008	MF 112	Helicopter	84	5
2008	MF 113	Helicopter	80	14
2008	MF 113	Helicopter	81	67
2008	MF 114	Tractor	164	7
2008	MF 115	Jammer	102	20
2008	MF 115	Jammer	103	3
2008	MF 115A	Jammer	59	13
2008	MF 115B	Jammer	60	14
2008	MF 115C	Jammer	61	5
2008	MF 115D	Jammer	166	17
2008	MF 116	Helicopter	158	27
2008	MF 119	Jammer	165	20
2008	MF 120	Single-Span Sky	66	15
2008	MF 120	Single-Span Sky	163	12
2008	MF 125	Helicopter	63	11
2008	MF 125	Helicopter	78	28
2008	MF 125	Helicopter	154	7
2008	MF 125	Helicopter	156	17
2008	MF 125	Helicopter	157	3
2008	MF 125 &103	Helicopter	155	126
2008	PVT	Tractor	204	32
2008	PVT	Tractor	205	7
2008	PVT	Tractor	206	139
2008	PVT	Tractor	207	24
2008	PVT	Tractor	208	15
2008	PVT	Tractor	209	73
2008	PVT	Tractor	210	165
2008	PVT	Tractor	211	15
2008	PVT	Tractor	212	240
2008	PVT	Tractor	213	2876
2008	PVT	Tractor	214	40
2008	PVT	Tractor	215	67
2008	PVT	Tractor	216	5
2008	Sugarloaf 201	Jammer	180	5
2008	Sugarloaf 201	Single-Span Sky	179	8
2008	Sugarloaf 204	Single-Span Sky	178	34
2008	Sugarloaf 210	Helicopter	138	5
2008	Sugarloaf 211	Helicopter	51	14

Harvest Year	Sale Name	Harvest Method	Stand Label	Acres
2008	Sugarloaf 220	Single-Span Sky	170	2
2008	Sugarloaf 221	Tractor	49	28
2008	Sugarloaf 222	Jammer	171	33
2008	Sugarloaf 223&4	Single-Span Sky	172	44
2008	Sugarloaf 228	Helicopter	147	26
2008	Sugarloaf 230	Single-Span Sky	141	14
2008	Sugarloaf 231	Single-Span Sky	169	12
2008	Sugarloaf 234	Single-Span Sky	54	17
2008	Sugarloaf 235	Jammer	45	77
2008	Sugarloaf 235	Jammer	92	12
2008	Sugarloaf 237	Single-Span Sky	93	15
2008	Sugarloaf 238	Jammer	48	14
2008	Sugarloaf 239	Cable	175	3
2008	Sugarloaf 240	Single-Span Sky	176	29
2008	Sugarloaf 241	Tractor	47	33
2008	Sugarloaf 241	Tractor	174	13
2008	Sugarloaf 242	Cable	177	6
2008	Sugarloaf 244	Single-Span Sky	50	28
2008	Sugarloaf 245	Jammer	90	15
2008	Sugarloaf 245	Jammer	91	8
2008	Sugarloaf 245	Jammer	181	34
2008	Sugarloaf 246	Helicopter	182	71
2008	Sugarloaf 246	Single-Span Sky	184	5
2008	Sugarloaf 247	Jammer	183	2
2008	Sugarloaf 249	Jammer	185	7
2008	Sugarloaf 250	Helicopter	89	10
2008	Sugarloaf 250 E&F	Helicopter	82	177
2008	Sugarloaf 250A&D	Helicopter	186	128
2008	Sugarloaf 250G	Helicopter	187	26
2008	Sugarloaf 251	Tractor	139	4
2008	Sugarloaf 402	Pickup	140	4
2009	Grays Cr 335A	Jammer	44	8
2009	Grays Cr 335B	Jammer	95	94
2009	Grays Cr 335C	Jammer	96	8
2009	Grays Cr 336	Jammer	143	3
2009	Grays Cr 337	Helicopter	94	7
2009	Grays Cr 338	Helicopter	145	20
2009	Grays Cr 338A	Helicopter	144	6
2009	Grays Cr 338B	Helicopter	191	7
2009	Grays Cr 338C	Helicopter	42	6
2009	Grays Cr 340	Jammer	101	11
2009	MF 100	Jammer	161	8
2009	MF 108	Jammer	55	45
2009	MF 109	Jammer	58	7
2009	MF 109	Jammer	86	14
2009	MF 117	Jammer	167	24
2009	MF 118	Jammer	168	12
2009	Sugarloaf 202	Jammer	137	9
2009	Sugarloaf 202A	Jammer	52	5
2009	Sugarloaf 227	Tractor	46	16
2009	Sugarloaf 233	Helicopter	53	16
2009	Sugarloaf 243	Jammer	173	26
2011	MF Blowdown 02	Tractor	108	14
2011	MF Blowdown 02	Tractor	110	17
2011	MF Blowdown 02	Tractor	114	14
2011	MF Blowdown 03	Tractor	109	28
2011	MF Blowdown 06	Tractor	111	16
2011	MF Blowdown 06	Tractor	112	42

Harvest Year	Sale Name	Harvest Method	Stand Label	Acres
2011	MF Blowdown 06	Tractor	113	7
2011	MF Blowdown 09	Tractor	107	5
2011	MF Blowdown 09	Tractor	115	4

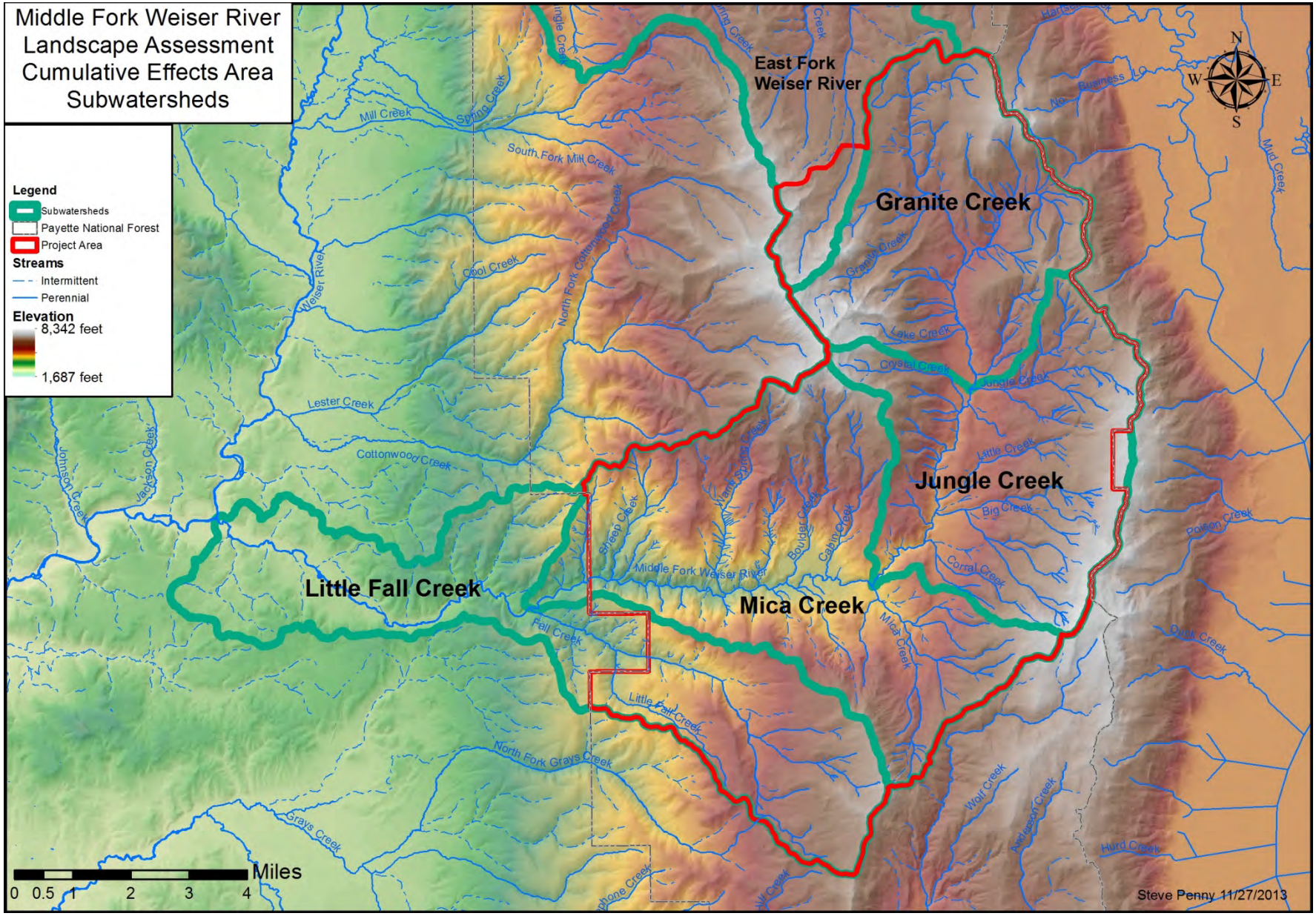

Figure 1. Cumulative Effects Analysis Area

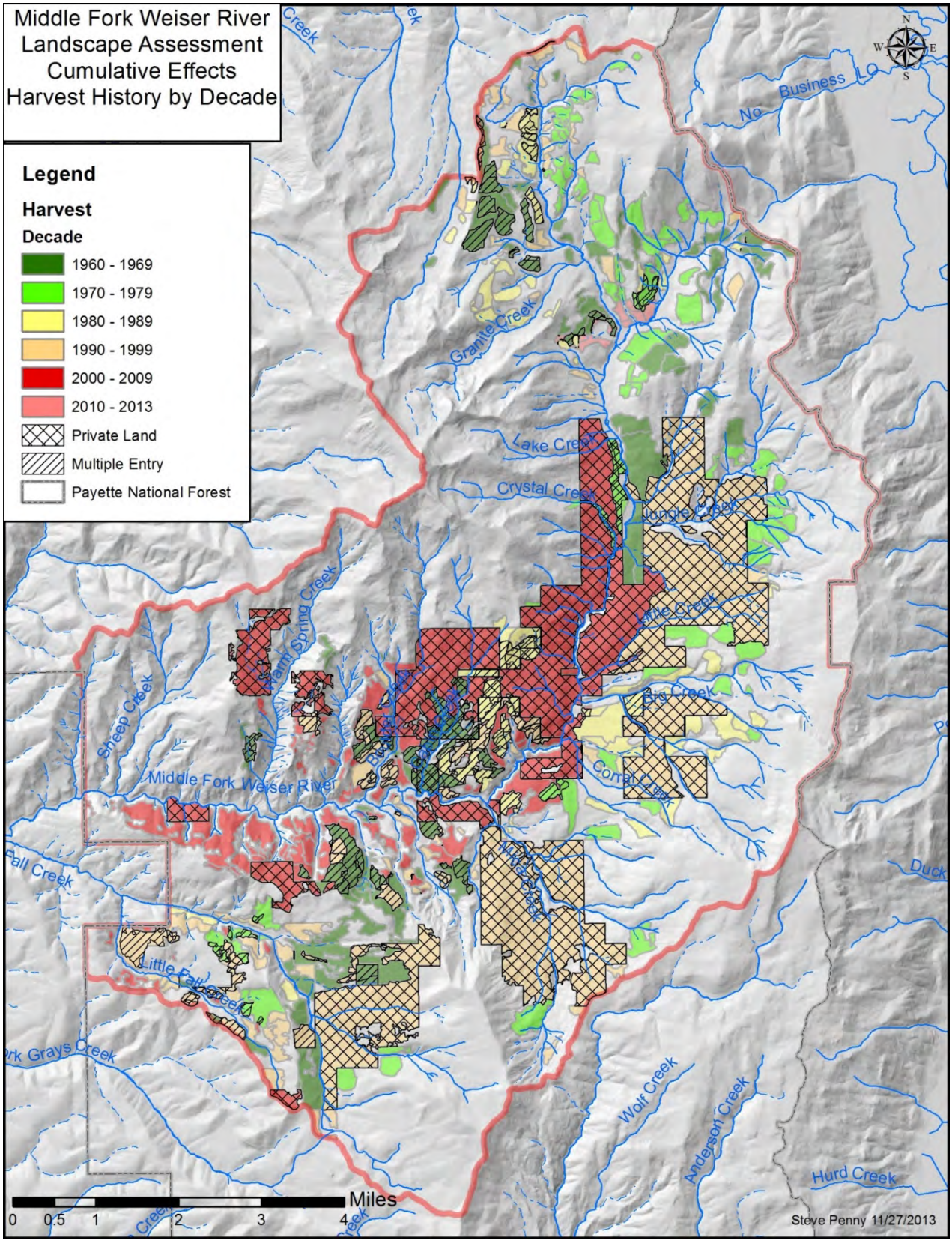

Figure 2. Past Harvest within the Project Area

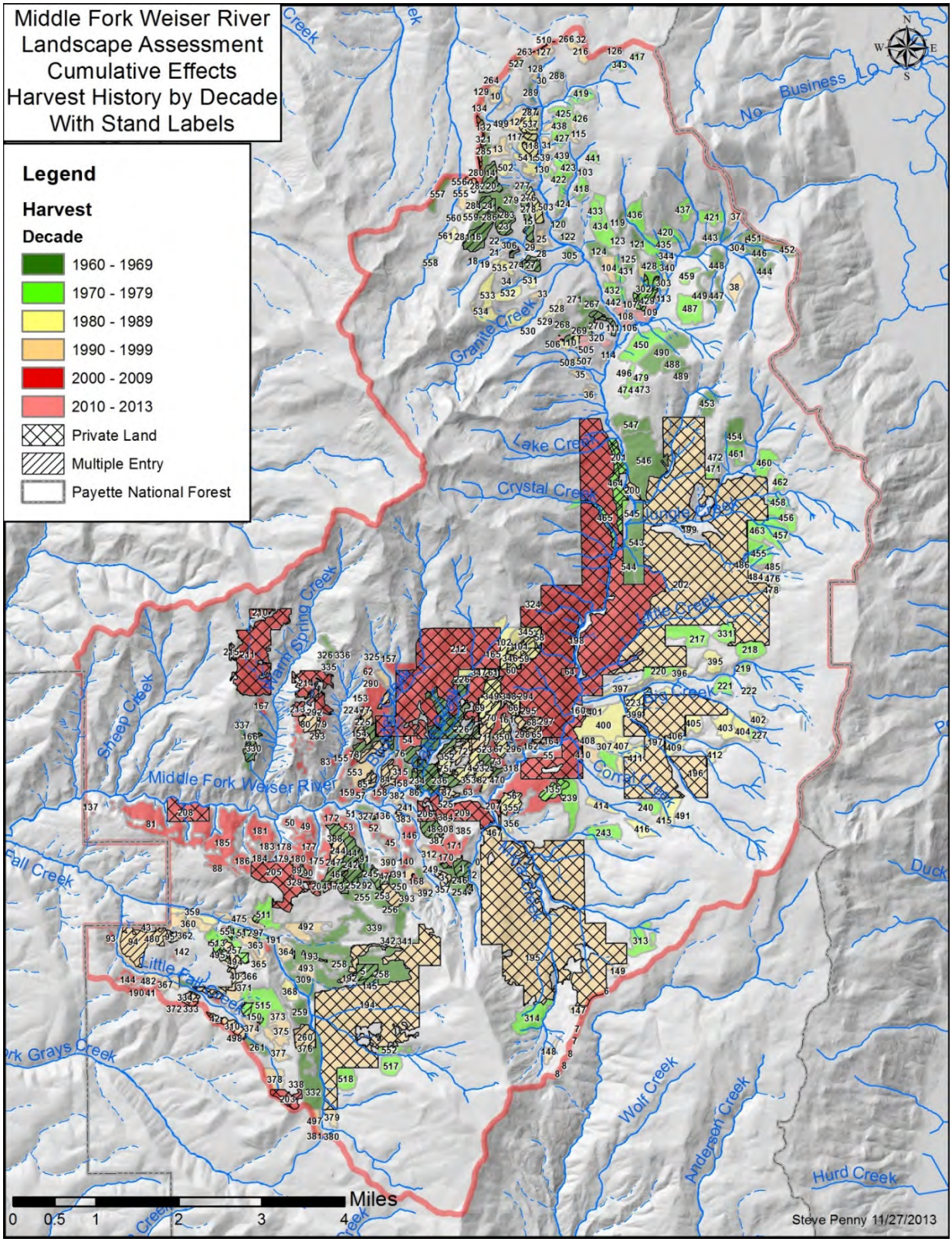

Figure 3. Past Harvest within the Project Area with Stand Labels—Crosswalk to Harvest Tab

Table 3. Other actions that may be considered in the Cumulative Effects Analysis for the Middle Fork Weiser River Landscape Assessment Project

Project #	Action	Past, Present and Reasonably Foreseeable Description of the Action	Date
	Timber harvest/ precommercial thinning/ prescribed fire/reforestation on National Forest	Timber harvest—see past harvest table and maps. From 1964 to 2011, GIS records show a total of 5,440 acres reforested on NFS lands within the project area. Records on prescribed fire are not complete; most of the planted areas received site preparation that may have included pile burning or broadcast burning. Landscape burning for restoration has not been implemented in the project area. Activities on the Boise National Forest adjacent to the Project include the West Mountain North project which treated vegetation east of No Business Saddle.	Early 1930s to present and ongoing
	Timber harvest on private land	There are 1,852 acres of private land in the Cumulative Effects Analysis Area. Most of the forested area has been managed using various cutting methods with a variety of silvicultural treatments or thinning from above. Boise Cascade is a major landowner within the Project area and has entered for harvest the majority of their ownership (see Table 1, Figure 2, and Figure 3).	Early 1900s to present and ongoing
	Timber harvest on State land	There are about 1,363 acres of State land in the Cumulative Effects Analysis Area. State land management maximizes returns to the trust beneficiaries of the State. The trust lands are intensively managed for timber growth and yield.	Early 1900s to present and ongoing
	State land acquisition	Section 36 T15N R1E and Section 16 T15N R2E, were acquired from the State of Idaho in June, 1990. Using aerial photographs from the 1960s, the following observations were made. Section 36 in Fall Creek contained no roads or logging in 1962 but was roaded and logged by 1969. The cutting could be described as a selective cut tending towards a high-grade. Section 16 in the Mica Creek drainage was roaded and logged prior to 1962. The 1962 photos showed portions of roads that were brushed in and roads undriveable. Photos from 1946 showed no roads or logging activity. The best estimate by observation is that it was logged and roaded from the late 1940s to the early 1950s with the same type of selective cut/ high-grade harvest used in section 36.	1990

Project #	Action	Past, Present and Reasonably Foreseeable Description of the Action	Date
	Water diversions	Diversion (by Fall Creek) for Mesa Orchards completely dewatered the Middle Fork Weiser River.	1939-1941
	National Forest System Roads	The majority of the road system in the Project area was developed in the 1940s, 1950s, 1960s, and 1970s for timber harvest. There were a few roads and wagon trails constructed prior to World War II. Timber harvest on the Forest peaked in the 1960s and has declined since. The road system in the area was primarily developed for timber harvest. The Forest began using area transportation planning in the late 1970s. Road construction and improvement activities were planned for on an area basis rather than individual harvest units. Environmental analysis on timber sales also began at this time, resulting in improved road planning and mitigations. Roads adjacent to streams were either graveled or relocated away from streams. Poor sections of road were either improved or decommissioned. There has been an emphasis on road decommissioning and elimination during the past 20 years: 7.6miles of road have been decommissioned within the Project area. Timber harvest in the area in the late 1940s and early 1950s was usually done with a Caterpillar tractor towing a track-mounted arch trailer. The tractor with the arch trailer was limited in travel on the sideslope due to potential jack-knifing. As a result, constructed skid roads were common and often difficult to distinguish from a normal road. Road construction equipment at the time consisted mostly of bull dozer tractors. Roads were typically developed adjacent to streams with limited stream buffers. Commercial timber harvest on the Forest reached a peak in the 1960s. During this period, the road system in the area was expanded and improvements, such as graveling and drainage, occurred on the main roads, which were constructed in the 1950's under the land-for-timber swap. The original road construction in the late 1940s and early 1950s often constructed drainage crossings using native logs for culverts and bridges. The native timber structures were replaced and gravel was applied on the main access roads from the 1960s through the 1980s. Old log culverts are still found occasionally on older closed roads. These old log culverts are often decayed and caved in. Many culverts installed in the past are barriers to fish passage.	1900s to present and ongoing
	Road maintenance	Road maintenance includes cleaning culverts, blading existing roads, and brushing rights-of-way.	Past and ongoing
	Fire suppression	Active fire suppression across the area since the 1930s has likely limited the number and extent of wildland fires and their associated effects on vegetation structure, composition, and function, with the exception of the Grays Creek Fire in 2007.	1930s to present and ongoing
	Fires in recorded history	The Grays Creek Fire in 2007 burned 17,789 acres of which 7,890 acres are in the Cumulative Effects Analysis Area. 270 acres were salvage harvested in 2008 and 2009 and subsequently planted.	1944 to 2013
	Livestock management	Cattle and sheep grazing have occurred throughout the area since the late 1800s. No sheep allotments currently occur in the Project area. Management of livestock grazing is permitted under the Council Mountain and Indian Mountain Allotments.	Late 1800s to present and ongoing

Project #	Action	Past, Present and Reasonably Foreseeable Description of the Action	Date
	Floods	Two major flood events that impacted roads and streams in the Project area have occurred in the past two decades. First, 1997 floods resulted in the need for many road repairs, primarily in the … Second, heavy rains over several days in early June 2010 caused flooding in Warm Springs, Bar, Boulder, Upper Middle Fork Weiser, and Lake Creek as well as many small tributaries. Drainages burned by the 2007 Grays Creek Fire were especially affected, as flood waters moved quickly through these areas with likely higher peak flows than in an unburned watershed. A shallow landslide along the Middle Fork Road just downstream of the Boulder Creek confluence caused over 300 feet of the road to fail. Repairs at all stream crossings mentioned, in addition to the landslide, were completed over the summer of 2010. However, sites are still unstable and several crossings have experienced minor flooding and obstruction by debris jams since the repairs were made. It is likely that major stream crossings along the Middle Fork Road will continue to be affected by flood and high runoff events. The road is built adjacent to the stream channel, making crossings and the road prism vulnerable to the effects of high flows. In turn, these impacts affect stream channel and bank condition; when the road or a culvert fails the stream is impacted by sediment and loss of riparian vegetation.	Past, 1997, 2010, reasonably foreseeable in the future
	Firewood harvest on National Forest System Lands	Harvest is to occur along open roads and in designated areas, while adhering to Forest firewood permits. The Council Ranger District has opened selected roads with the Firewood Road Opening Project since 2009. Roads included within the Project area include Roads 50256, 50223, and 50258 in 2011 and 2013. Road 50205 was also permitted for the Council Senior Program in 2012.	Past and ongoing
	Noxious weeds	Treatment of noxious weeds would follow directions in the 1987 Payette National Forest Noxious Weed and Poisonous Plant Control Program Environmental Assessment and Decision Notice.	Past and ongoing
	Recreation use	Camping is permitted at numerous dispersed camp sites and at one campground with associated hiking, ATV/OHV, fishing, and hunting activities. Hunting is permitted in the spring (bear, turkey) and fall (big game). Fishing is permitted during the spring, fall, and summer while snowmobiling is permitted from December through March. General travel and sightseeing on NFS lands are also popular. Recreational use of private land includes camping, hunting, and soaking in White Licks Hot Springs	1900s to present and ongoing
	Campground management	Management of Cabin Creek campground	Past, present and ongoing
	Travel Management Plan	The recent Travel Management Plan Decision (signed February 2009) made cross-country motorized travel illegal from areas previously open (areas C, D, and E on the 1995 Travel Map), closed unauthorized roads that may have been travelable with ATV or full-size vehicles, increased the miles of motorized trails available for ATV use, and opened previously closed system roads to seasonal use within the Cumulative Effects Analysis Area. The 2009 Decision had no effect on winter use.	2009 and ongoing
	ATV and other motorized use	Future motorized use would be on designated roads and trails only. No cross-country travel would be permitted. Levels of unauthorized use would decrease with increased education and public awareness of travel management designations.	Past and ongoing

Project #	Action	Past, Present and Reasonably Foreseeable Description of the Action	Date
	Use and improvement of National Forest System Recreation Trails	Management of forest trails would include erosion work, route signing, and maintenance. The trail network includes 39 miles adjacent to and within the Project area. Existing designated system recreation trails would be maintained, including erosion control and hazardous tree removal.	ongoing

Appendix 4
Monitoring and Evaluation

Monitoring and evaluation are used to determine whether the *Payette National Forest Land and Resource Management Plan* (Forest Plan)[1] is being implemented correctly and to determine the effectiveness of Forest Plan standards and guidelines, management requirements, and mitigation measures. Implementation monitoring is used to decide whether the project was implemented as planned. Effectiveness monitoring determines whether the project design and mitigation measures were effective in meeting resource protection objectives. Items that would be monitored, if an action alternative is selected, are identified in Best Management Practices and Monitoring Plans on file in the Project Record at the Council Ranger District. Table 1 provides a monitoring plan summary, and for some elements a more detailed monitoring plan summary sheet follows.

Table 1. Monitoring plan summary

Resource	Monitoring Item	Timing	Personnel
Wildlife	Implementation and effectiveness of restoration treatments to provide wildlife habitat improvement	Implementation monitoring will coincide with all harvest-related activities. Effectiveness monitoring will occur for up to 5 years following on-site restoration activities.	Journey-level wildlife biologist and wildlife technicians, coordinated with Sale Administrator and Timber Management Assistant
Fisheries	Temperature monitoring	Will continue to monitor water temperatures at already-established locations in the Middle Fork watershed.	Biological and hydrologic technicians, and fisheries biologist or hydrologist
Fisheries and Watershed	RCA treatment delineation	Implementation monitoring will occur after treatment unit layout/marking but before vegetation treatment begins. 20% of RCA treatment units will be monitored to ensure proper delineation. Priority will be given to wet meadow units and units with steep slopes and/or sensitive soils.	Hydrologist or Journey-level fisheries biologist and biological and hydrologic technicians
Fisheries and Watershed	Implementation and effectiveness of RCA treatments and prescribed fire	Implementation monitoring will occur prior to RCA treatment and immediately after in the same year, then again after prescribed fire. Effectiveness monitoring will occur once the year following the activity; if the need for additional work or monitoring is identified, effectiveness monitoring will continue as the journey-level specialist deems appropriate for up to 5 years.	Hydrologist or Journey-level fisheries biologist and biological and hydrologic technicians
Fisheries	Implementation and effectiveness of culvert replacements	Implementation monitoring will occur in the same year as replacement. Effectiveness monitoring will occur once the year following the activity; if the need for additional work or monitoring is identified, effectiveness monitoring will continue as the journey-level specialist deems appropriate for up to 5 years.	Journey-level fisheries biologist and fisheries technicians

[1] USDA Forest Service. 2003. Payette National Forest Land and Resource Management Plan. USDA Forest Service, Payette National Forest, McCall, ID.

Resource	Monitoring Item	Timing	Personnel
Soil and Water	Monitoring of detrimental disturbance (DD) levels	Monitoring will occur in timber sale units, focusing on tractor logged commercial units, following harvest to determine if the Forest Plan detrimental disturbance standard has been met.	Soil scientist and technicians
Soil and Water	Implementation and effectiveness of road decommissioning and long-term closure treatments	Implementation monitoring will occur during the year of decommissioning activities. Effectiveness monitoring will occur, at a minimum, the first year after implementation, and then at years 3 and 5, unless findings indicate sites have stabilized and revegetated to their natural potential prior to 5 years post-implementation.	Hydrologic technicians and hydrologist

Resource	Monitoring Item	Timing	Personnel
Soil and Water	Implementation and effectiveness of Timber Best Management Practices	The majority of the monitoring will occur during harvest operations in at least 20% of harvest units. Where revegetation or reclamation is planned, monitoring will be conducted a minimum of twice—the first year for implementation and the second year for effectiveness—allowing one snowmelt and spring runoff to occur.	Hydrologist or soil scientist, hydrologic technicians
Soil and Water	Implementation and effectiveness of prescribed fire prescriptions/soil response	The majority of the monitoring will occur prior to, and immediately following, burning operations. Soil moisture at the time of burning, and vegetation/soil response to burning, will be evaluated.	Soil scientist, fuels specialist and fuels technicians
Soil and Water	Implementation of coarse woody debris retention requirements in mechanical treatment units	Monitoring would occur during and/or immediately after mechanical treatment	Soil scientist, Timber Sale Administrator
Vegetation	Fire effects on plantations, harvest units, and burn only stands	Monitoring will occur pre- and post-burning operations	Fuels specialist and silviculturist
Vegetation	Harvest unit boundaries and timber marking	Monitoring will occur during sale preparation activities.	Sale preparation Forester and Silviculturist
Vegetation	Need for site preparation and regeneration in harvest units and burn only units	Monitoring will occur after harvest and/or burning operations	Silviculturist
Vegetation	Need for protection of aspen regeneration	Monitoring will occur after harvest and/or burning operations	Silviculturist and Wildlife Biologist
Vegetation	Need for IPS beetle mitigation measures	Monitoring will occur during and after harvest operations	Silviculturist, Sale Administrator, and FHP Entomologist
Vegetation	Need for general bark beetle mitigation measures	Monitoring will occur after harvest and/or burning operations	Silviculturist and FHP Entomologist
Range	Noxious weeds	Monitoring will occur immediately after harvest and road work activities and continue for the following 5 years.	Range technicians
Cultural	Cultural and archeological sites	Monitoring will occur prior to ground-disturbing activities in areas needing clearance and on-going-in areas identified as “Eligible” by the State Historical Preservation Officer	Archeologist or Archeological Technician

MONITORING PLAN SUMMARY SHEET

Program:	Wildlife – Northern Idaho ground squirrel (NIDGS) (ESA-Threatened)
Activity, Practice, or Effects:	Project Monitoring, Wildlife. Protection of NIDGS and NIDGS habitat.
Project Name:	Middle Fork Weiser River Landscape Restoration Project (MFWR). NIDGS clearances for project activities in, or adjacent to harvest units, landings, equipment parking areas, skid trails, temporary road routes, rods to be obliterated of placed into long term closure, trail construction or maintenance, or any other ground-disturbing activity.
Location:	Payette National Forest, Council Ranger District, MFWR Project Area.
Objectives:	Survey, and clear for implementation, sites of planned project activities in, or adjacent to, NIDGS habitat, prior to any ground-disturbing activity occurring.
Parameters:	1. As feasible, monitoring surveys should be conducted during the period that NIDGS would be active above ground, roughly April 1 through August 15, depending on the elevation of the site. 2. If no NIDGS are observed at the site, but burrows resembling NIDGS burrows are present, results of the survey will favor the possibility of NIDGS at the site. 3. Confirmation of NIDGS may require multiple visits to the site and may require more intensive monitoring in following years.
Methodology:	Wildlife staff will survey all NIDGS habitat within the Project area where any ground-disturbing activity might occur. In addition, NIDGS surveys will be conducted at specific sites, prior to any ground-disturbing activity. Monitoring surveys will follow procedures developed by the Forest, with input, when necessary, from USDI fish and Wildlife Service, Idaho Department of Fish and Game, and Dr. Eric Yensen, College of Idaho.
Frequency:	These surveys will be conducted prior to any ground-disturbing activity, or whenever the Sale Administrator requires confirmation of NIDGS, or NIDGS habitat presence or absence. Even if a particular site has been cleared for project activities for one season, the same site must be cleared again in future seasons, to ensure that NIDGS have not immigrated into the area, since the last clearance survey was conducted.

Duration:	Monitoring surveys should be conducted annually, especially at sites where ground-disturbing activity is expected.
Data Storage:	Wildlife Program Files on the District and Forest in NIDGS GIS GeoDatabase and in the Forest database for NRM entry.
Analysis:	Update GIS information on NIDGS observations and habitat monitoring.
Report:	Wildlife field reports summarizing NIDGS monitoring results.
Cost:	40 days for 2, GS-5 Wildlife Technicians @ $108 per day: X 2 Techs = $8,640. 20 days for GS-6 Wildlife Technician @ $120/day = $2,400. 20 days for GS-11 West Zone Wildlife Biologist @ $230 per day = $4,600. Total cost = $15,600 per fiscal year. Vehicles and miscellaneous equipment not included.
Personnel:	West Zone Wildlife Biologist and Wildlife staff.
Responsible Individual:	West Zone Wildlife Biologist, Payette National Forest.
Responsible Official:	District Ranger, Council Ranger District, Payette National Forest.
Prepared by:	Jon Almack, West Zone Wildlife Biologist, 27 Oct 2015.

MONITORING PLAN SUMMARY SHEET

Program:	Wildlife - Northern goshawk (NOGO)
Activity, Practice, or Effects:	Project Monitoring, Wildlife. Protection of NOGO nest sites.
Project Name:	Middle Fork Weiser River Landscape Restoration Project (MFWR).NOGO clearances for project activities in, or adjacent to, nest stands and Post-Fledging Areas (PFAs).
Location:	Payette National Forest, Council Ranger District, MFWR Project Area.
Objectives:	Survey, and clear for implementation, sites of planned project activities in NOGO nest stands and PFAs, prior to other crew entry, or harvest-related activities.
Parameters:	
	1. Before project activities commence, conduct field survey of stands designated as active or replacement nest stands via GIS to verify suitability as nest stands.
	2. Before project activities commence, survey PFAs to ensure correct harvest prescriptions to meet Southwest Guidelines or other appropriate research for conservation of PFAs.
	3. Conduct surveys to identify presence of NOGO adults and/or young at nests, in the nest stands, or in the PFAs.
	4. Following appropriate Mitigation Measures, a timing restriction on entry into the nest stand and PFA is in place from March 1 to September 30.
	5. If surveys by Wildlife staff show that NOGO adults and/or young are no longer present in the nest stand and/or PFA, other crew entry and/or project activities may be allowed by the Wildlife Biologist, in coordination with the Sale Administrator and the Timber Management Assistant.
Methodology:	Wildlife staff will survey all known NOGO nest sites, the replacement nest stands, and the PFAs by field surveys. In addition to visual and aural NOGO identification, recorded NOGO calls may be used to elicit vocal responses, allowing species identification.
Frequency:	These surveys will be conducted *prior to other crew entry or other project activity* of any NOGO nest stand, or PFA.

Duration:	Surveys would follow requirements noted in the Mitigation Measures. It may be necessary to survey nest stands and PFAs several times during spring and summer, to determine if NOGO adults and/or young are present.
Data Storage:	Wildlife Program Files on the District and Forest in NOGO GIS GeoDatabase and in the Forest database for NRM entry.
Analysis:	Update GIS information on nest stand and PFA condition
Report:	Wildlife field reports summarizing survey results.
Cost:	40 days for 2, GS-5 Wildlife Technicians @ $108 per day: X 2 Techs = $8,640. 20 days for GS-6 Wildlife Technician @ $120/day = $2,400. 10 days for GS-11 West Zone Wildlife Biologist @ $230 per day = $2,300. Total cost = $13,340 per fiscal year. Vehicles and miscellaneous equipment not included.
Personnel:	West Zone Wildlife Biologist and Wildlife staff.
Responsible Individual:	West Zone Wildlife Biologist, Payette National Forest.
Responsible Official:	District Ranger, Council Ranger District, Payette National Forest.
Prepared by:	Jon Almack, West Zone Wildlife Biologist, 27 Oct 2015.

MONITORING PLAN SUMMARY SHEET

Program: Wildlife – Selected Region 4 Sensitive Species and Management Indicator Species.

- White-headed woodpecker (R4SS, MIS)
- Pileated woodpecker (MIS)
- Flammulated owl (R4SS)
- Great gray owl (R4SS)
- Boreal owl (R4SS)

Activity, Practice, or Effects: Project Monitoring, Wildlife. Protect known nest sites, monitor occupancy of source habitat by MIS and sensitive species.

Project Name: Middle Fork Weiser River Landscape Restoration Project (MFWR).Pre-Implementation Wildlife Monitoring Surveys.

Location: Payette National Forest, Council Ranger District, MFWR Project Area.

Objectives: 1. Document presence of species in units receiving restoration treatment;
2. Locate nests and/or nest stands;
These objectives may change as more information is available. Portions of this work may be conducted by the Rocky Mountain Research Station or other researchers.

Parameters: 1. Conduct surveys in areas where species are suspected and locate nests.

2. Record location of nest tree, species of nest tree, nest height above ground, nest aspect on tree, period of use, nest stand characteristics, and adjacent stand characteristics.

3. Establish photo points at nest sites.

4. Conduct *Before & After* sampling of restoration stands treated, to determine presence of species. After sampling should be annually for 5 years post-harvest & burn treatments.

5. Establish photo points at representative sites, providing a basic method for tracking changes in the stand over the period of time it is moved toward HRV.

Methodology: Use current methods applicable to this project and the monitoring objectives, as noted in professional journals and agency reports, to meet the stated objectives.

- Locate nests and nest stands with GPS, using UTM Zone 11T, with North American Datum 1983;
- Establish photo points for each nest and nest stand identified;
- Use survey transects already used by the Forest for surveys on these species.
- For white-headed and pileated woodpeckers, follow established Forest protocols.
- For flammulated, great gray, and boreal owl surveys, conduct surveys at night, following established Forest protocols.
- White-headed and pileated woodpecker monitoring sill include established Forest transects and those established by the West Zone.

Frequency: Repetitive sampling should occur annually for the first 5 years post-treatment. At that point, evaluate to determine the need for changes in sampling design. As other restoration projects are conducted on the West and Central zones of the Forest, this sampling design may change again, to accommodate additional project areas with like treatments.

Duration: Sampling should continue for at least 5 years, in order to determine long-term trends in population demographics.

Data Storage: Wildlife Program Files on the District and Forest in NOGO GIS GeoDatabase and in the Forest database for NRM entry.

Analysis: Specific analysis will follow the methods described by the Principal Investigator.

Report: Annual reports summarizing survey results.

Final project report, due when funding terminated.

Cost:	40 days for 2, GS-5 Wildlife Technicians @ $108 per day: X 2 Techs = $8,640. 20 days for GS-6 Wildlife Technician @ $120/day = $2,400. 10 days for GS-11 West Zone Wildlife Biologist @ $230 per day = $2,300. Total cost = $13,340 per fiscal year. Vehicles and miscellaneous equipment not included. Long-term monitoring of these sites should continue, but cannot assign those funds at this time.
Personnel:	Principal Investigator/West Zone Wildlife Biologist and 3 Wildlife Technicians from the USFS.
Responsible Individual:	West Zone Wildlife Biologist, Payette National Forest.
Responsible Official:	District Ranger, Council Ranger District, Payette National Forest.
Prepared by:	Jon Almack, West Zone Wildlife Biologist, 27 Oct 2015.

MONITORING PLAN SUMMARY SHEET

Program:	Wildlife – Rocky Mountain elk
Activity, Practice, or Effects:	Project Monitoring, Wildlife. Road closure effectiveness for elk habitat security.
Project Name:	Middle Fork Weiser River Landscape Restoration Project
Location:	Payette National Forest, Council Ranger District, Project Area.
Objectives:	On roads used for project activities and then closed, check to ensure that each road has an effective closure in place.
Parameters:	1. Identify roads that were opened for project use and then closed to vehicle access. 2. Locate the site of the road closure (gate, beginning of road obliteration, etc.). 3. Record the location and type of closure. 4. Document the effectiveness of the closure. 5. Report the effectiveness results to the District Ranger and Forest Wildlife Program Manager.
Methodology:	1. Use roads table from the FEIS to identify the roads that are slated for closure following use on the project. 2. Identify the type of closure specified for each road slate for closure. Temporary roads are to be fully obliterated. Preferred closure for NFS roads to be closed to public use is obliteration of the initial portion of the road visible from an open road. Other closure types could include a gates or barricades. 3. Record the location of the closure by GPS, UTM, Zone 11T, using North American Datum 1983. 4. Record at least one digital photograph of the closure site and of any situation that needs corrective action, to make the closure effective for preventing vehicle access to the road. 5. All results will be documented in a report to the District Ranger, so that ineffective closures can be assigned priority to be brought into compliance with this Project Design Feature.

Frequency:	These surveys will be conducted following the period when the road is no longer needed for project activities and the appropriate closure has been placed. In some cases, a second survey may be necessary at a particular closure site, to ensure that the closure meets the intention of blocking vehicle access.
Duration:	Many of these closure effectiveness monitoring surveys would be conducted immediately after the closure is put in place. Many of these activities will be on a sub-watershed basis. For example, once all of the access roads and haul routes are no longer needed in the East Fork Weiser River sub-watershed, these closure effectiveness surveys would be conducted for all of the closed roads in that sub-watershed.
Data Storage:	Wildlife Program Files on the District and Forest in NOGO GIS GeoDatabase and in the Forest database for NRM entry.
Analysis:	No analysis required.
Report:	Wildlife field reports summarizing survey results.
Cost:	Cost varies, depending on personnel and time involved. GS-5 Wildlife Tech @ $108/day) x 10 days = $1,080. Wildlife Biologist GS-11(6) @ $230/day x 5 days = $1,150. Total cost = $2,230 per fiscal year. Vehicles and miscellaneous equipment not included.
Personnel:	West Zone Wildlife Biologist and Wildlife staff.
Responsible Individual:	West Zone Wildlife Biologist, Payette National Forest.
Responsible Official:	District Ranger, Council Ranger District, Payette National Forest.
Prepared by:	Jon Almack, West Zone Wildlife Biologist, 20 March 2012.

MONITORING PLAN SUMMARY SHEET

Program:	Fisheries
Activity	Project Monitoring
	Implementation and effectiveness of culvert replacements
Project Name:	Middle Fork Weiser River Landscape Restoration Project
Location:	Council Ranger District, Granite Creek-Middle Fork Weiser River, Jungle Creek-Middle Fork Weiser River, Little Fall Creek-Middle Fork Weiser River, Mica Creek-Middle Fork Weiser River
Objectives:	*To document culvert replacements and determine if fish passage was provided
Methodology:	Culvert replacements will be photographed and evaluated for fish passage.
	This methodology may be adjusted as needed.
Frequency/Duration:	Implementation monitoring will coincide with activities.
	Culvert replacements will be monitored the year of implementation and annually for 2 years.
Personnel:	One hydrologic technicians and/or biological technicians, one fisheries biologist and/or hydrologist
Responsible Official:	Council District Ranger
Prepared by:	Trisha Giambra, West Zone Fisheries Biologist
Date:	December 2015

MONITORING PLAN SUMMARY SHEET

Program:	Fisheries
Activity	Project Monitoring
	Water temperatures
Project Name:	Middle Fork Weiser River Landscape Restoration Project
Location:	Council Ranger District, Granite Creek-Middle Fork Weiser River, Jungle Creek-Middle Fork Weiser River, Little Fall Creek-Middle Fork Weiser River, Mica Creek-Middle Fork Weiser River
Objectives:	*To monitor stream temperatures in the project area.
Methodology:	Established stream temperature monitoring sites will continue to be monitored with thermographs placed in-stream at locations in the Middle Fork Weiser River drainage. This methodology may be adjusted, as needed.
Frequency/Duration:	Temperature monitoring will begin in 2015 and will continue annually until 2025. This may be adjusted, as needed.
Personnel:	Biological and hydrologic technicians, fisheries biologist and/or hydrologist
Responsible Official:	Council District Ranger
Prepared by:	Trisha Giambra, West Zone Fisheries Biologist
Date:	December 2015

MONITORING PLAN SUMMARY SHEET

Program:	Fisheries and Watershed
Activity	Project Monitoring
	Implementation of RCA treatment delineation
Project Name:	Middle Fork Weiser River Landscape Restoration Project
Location:	Council Ranger District, Granite Creek-Middle Fork Weiser River, Jungle Creek-Middle Fork Weiser River, Little Fall Creek-Middle Fork Weiser River, Mica Creek-Middle Fork Weiser River
Objectives:	*To monitor the extent of vegetation treatments within RCAs for the MFWR Project.
Methodology:	Implementation monitoring will occur after treatment unit layout/marking but before vegetation treatment begins or, if time does not permit this, after vegetation treatment. 20% or more of RCA treatment units will be monitored to ensure proper delineation. Perennial streams and fish-bearing intermittent streams should be delineated with 240 foot buffers; intermittent streams with 120 buffers. Vegetation treatments that may occur inside these buffers are described in FEIS Chapter 2 and Appendix 6. Monitoring priority will be given to units with wet meadows and/or aspen and units with steep slopes and/or sensitive soils. This methodology may be adjusted, as needed.
Frequency/Duration:	Project specific monitoring will begin after unit layout/marking and prior to treatment, ideally.
Personnel:	Two fisheries and/or hydrologic technicians and/or a hydrologist and/or journey-level fisheries biologist.
Responsible Official:	Council District Ranger
Prepared by:	Trisha Giambra, West Zone Fisheries Biologist
Date:	December 2015

MONITORING PLAN SUMMARY SHEET

Program:	Water and Fisheries
Activity, Practice or Effect:	Project Monitoring, Soil and Water, Implementation of Treatments in RCAs
Project Name:	Middle Fork Weiser River Harvest and Prescribed Fire Activities
Location:	Council Ranger District, Granite Creek-Middle Fork Weiser River, Jungle Creek-Middle Fork Weiser River, Little Fall Creek-Middle Fork Weiser River, Mica Creek-Middle Fork Weiser River
Objectives:	Determine if harvest and/or prescribed fire objectives have been met within RCA's within the project area, as defined in Chapter 2 (description of Alternatives). Specifically, evaluate ground and ladder fuels consumed, channel shade affected (if any), and soil condition and response to fire.
Parameters:	A total of 20% of RCA's (emphasis on perennial, fish bearing or non-fish bearing) across the project area will be monitored, with additional sites visited if specific resource concerns arise after prescribed fire operations take place. On-site field evaluation of treatments: 1. Fuels plots to monitor fuel loading and canopy cover before and after prescribed burning within the outer (treated) and inner (untreated) portion of the RCA 2. Establish photo points and take before (existing condition) and post treatment photos. 3. Where time and personnel allow, heel to toe transects in conjunction with photo points to determine amount and type of ground cover, and severity of burn. 4. In at least two perennial RCAs, densiometer (or other appropriate tool) measurements will be used to evaluate canopy and shade cover. *This methodology may be adjusted as needed.
Methodology:	Monitoring will be done once before treatment, immediately after, and again 1-2 years after. Where possible, document both qualitative and quantitative comparisons to pre-existing conditions. Photographs will be taken for comparison purposes.

Frequency:	In order to establish a baseline, monitoring will begin before harvest and prescribed fire activities. Effectiveness monitoring will occur at a minimum the first year after implementation and then at year 1 or 2 unless findings indicate sites either were not affected by treatment or have stabilized and re-vegetated to their natural potential.
Duration:	Up to five years.
Analysis:	Field documentation, summarization of fuels plots, densitometer, heel-to-toe transect data and on-site photographs before and after project implementation.
Report:	The written report will follow the format of the monitoring results data form developed on the Payette National Forest and be included in the annual monitoring result publication.
Personnel:	One GS-6 Hydro-Technician, one GS-9 Fuels Technician and one GS-11 Hydrologist.
Responsible Official:	Council District Ranger
Prepared by:	Melanie Vining, West Zone Hydrologist
Date:	December 2015

MONITORING PLAN SUMMARY SHEET

Program:	Soil and Water
Activity, Practice or Effect:	Project Monitoring, Soil and Water Resource Improvement, Implementation of Treatments.
Project Name:	Middle Fork Weiser River Road Decommissioning Treatments
Location:	Council Ranger District, Granite Creek-Middle Fork Weiser River, Jungle Creek-Middle Fork Weiser River, Little Fall Creek-Middle Fork Weiser River, Mica Creek-Middle Fork Weiser River
Objectives:	Determine if decommissioning has been properly implemented on approximately 76-88 miles of unauthorized and Forest Service system roads (depending on selected alternative) identified in the Middle Fork Weiser River FEIS/ROD. Decommissioning methods for reducing surface erosion and sediment delivery and restoring soil-hydrologic function include: de-compacting the road surface, recontouring to natural slope profile (as much as possible) to disperse runoff, utilizing native vegetation transplants, natural mulch, slash, and ag or wood straw over disturbed surfaces to provide a minimum of 50% and maximum 80% ground cover (80% at stream crossings), pulling culverts/re-establishing natural channel and seeding/fertilizing/straw mulching within riparian areas and at stream crossings. *The objective is to achieve restoration of natural ground contours and drainage patterns while attempting to match the coverage on the obliterated prism to the surrounding terrain without impeding would-be foot, wildlife, or livestock travel along the restored prism.*
Parameters:	On-site field evaluation of treatments will include one or more of the following: - Visual evidence of surface coverage with ground cover, vegetation transplants, and mulching or seeding in riparian areas - - Establish photo points and take before (existing condition) and post treatment photos. Utilize GPS coordinates and/or a permanent reference point to ensure replicability of photo point.

	- 100-pace heel to toe transects in conjunction with each photo point to determine amount and type of ground cover. **If time and budget constraints do not allow for this method, the minimum monitoring will include replication of photo points and a qualitative description of the site recovery/trend.*
Methodology:	Implementation monitoring will be accomplished through field verification of the planned treatments on selected roads, with emphasis placed on roads within riparian and/or sensitive areas (e.g., steeper slopes, sensitive soils). Where possible, both qualitative and quantitative comparisons to pre-existing conditions will be documented. Photographs will be taken for comparison. Effectiveness monitoring will be done at each photo point established during implementation using methods described above. *This methodology may be adjusted as needed.
Frequency:	Implementation monitoring will occur during the year of decommissioning activities. Effectiveness monitoring will occur, at a minimum, the first year after implementation, and then at years 3 and 5, unless findings indicate sites have stabilized and revegetated to their natural potential or need additional work, in which case monitoring may be extended .
Duration:	Monitoring will continue for up to 5 years
Analysis:	Field documentation, summarization of heel-to-toe transect data and on-site photographs before and after project implementation; keep data in binder with project name on front and spine as well as stored electronically.
Report:	The written report will follow the format of the Monitoring Results Data form developed on the Payette National Forest and be included in the annual monitoring results publication.
Responsible Official:	Council District Ranger
Prepared by:	Melanie Vining, West Zone Hydrologist
Date:	December 2015

Note: The road decommissioning itself could be done via contract or Forest crew (Force Account). If work is done via contract, the monitoring report should also evaluate the effectiveness of the contract language and oversight (i.e., Contracting Officers Representative, inspectors) at achieving desired results. This evaluation should be used as a tool by which to determine changes, if any, that could improve contract specifications or administration for road decommissioning.

MONITORING PLAN SUMMARY SHEET

Program:	Soil and Water
Activity, Practice or Effect:	Project Monitoring, Soil and Water Resource Improvement, Implementation of Treatments.
Project Name:	Middle Fork Weiser River Road Long-Term Closure Treatments
Location:	Council Ranger District, Granite Creek-Middle Fork Weiser River, Jungle Creek-Middle Fork Weiser River, Little Fall Creek-Middle Fork Weiser River, Mica Creek-Middle Fork Weiser River
Objectives:	Determine if long-term storage has been properly implemented on approximately 17-19 miles of Forest Service system roads (depending on selected alternative) identified in the Middle Fork Weiser River FEIS/ROD. Methods for reducing surface erosion and sediment delivery and restoring soil-hydrologic function include: removing culverts at intermittent and perennial stream crossings, installing water bars to ensure effective drainage, outsloping or scarifying road surface to reduce runoff, recontouring the road entrance to natural slope profile (as much as possible) utilizing native vegetation transplants at restored crossings and adding natural mulch, slash, and ag or wood straw over disturbed crossing to provide a minimum of 50% and maximum 80% ground cover (80% at stream crossings). *The objective is to achieve restoration of drainage patterns conducive to storage of the road, maintenance-free, for a period of 30 years or more.*
Parameters:	On-site field evaluation of treatments will include one or more of the following: - Visual evidence of surface coverage with ground cover, vegetation transplants, and mulching or seeding in riparian areas - Establish photo points and take before (existing condition) and post treatment photos at perennial crossings. Utilize GPS coordinates and/or a permanent reference point to ensure replicability of photo point. - - Monitoring of effectiveness of recontoured entrance as a closure method.

	- **If time and budget constraints do not allow for this method, the minimum monitoring will include replication of photo points and a qualitative description of the site recovery/trend.*
Methodology:	Implementation monitoring will be accomplished through field verification of the planned treatments on selected roads, with emphasis placed on roads within riparian and/or sensitive areas (e.g., steeper slopes, sensitive soils). Where possible, both qualitative and quantitative comparisons to pre-existing conditions will be documented. Photographs will be taken for comparison. Effectiveness monitoring will be done at each photo point established during implementation using methods described above. *This methodology may be adjusted as needed.
Frequency:	Implementation monitoring will occur during the year of closure. Effectiveness monitoring will occur, at a minimum, the first year after implementation, and then at years 3 and 5, unless findings indicate sites have stabilized and revegetated to their natural potential or need additional work, in which case monitoring may be extended.
Duration:	Monitoring will continue for up to 5 years
Analysis:	Field documentation, summarization of observations anddata and on-site photographs before and after project implementation; keep data in binder with project name on front and spine as well as stored electronically.
Report:	The written report will follow the format of the Monitoring Results Data form developed on the Payette National Forest and be included in the annual monitoring results publication.
Responsible Official:	Council District Ranger
Prepared by:	Melanie Vining, West Zone Hydrologist
Date:	December 2015

MONITORING PLAN SUMMARY SHEET

Program:	Soil and Water
Activity, Practice or Effect:	Project Monitoring, Soil and Water Resource Improvement, Implementation of Treatments
Project Name:	Middle Fork Weiser River Road Decommissioning (With Permittee Access Coordination)
Location:	Council Ranger District, Granite Creek-Middle Fork Weiser River, Jungle Creek-Middle Fork Weiser River, Little Fall Creek-Middle Fork Weiser River, Mica Creek-Middle Fork Weiser River
Objectives:	Determine if decommissioning **that has been designated for coordination with grazing permittees in order to allow access for cattle trailing, salting, or fence maintenance** has been properly implemented as described in the Middle Fork Weiser River EIS. Decommissioning methods for reducing surface erosion and sediment delivery and restoring soil-hydrologic function include: de-compacting the road surface, recontouring to disperse runoff, utilizing native vegetation transplants, natural mulch, slash, and ag or wood straw over disturbed surfaces to provide a minimum of 50% and maximum 80% ground cover (80% at stream crossings), pulling culverts/re-establishing natural channel and seeding/fertilizing mulching within riparian areas and at stream crossings. *The objective is to achieve restoration of natural ground contours and drainage patterns while attempting to match the coverage on the obliterated prism to the surrounding terrain without impeding would-be foot, wildlife, or livestock travel along the restored prism.* NOTE: The methods described above match those described for full obliteration and, where topography allows, these will be utilized on these permittee coordination roads as long as this method allows for cattle movement and/or other permitted access listed above. However, certain roads of this category (especially if located on steep slopes) will require a travelway be retained or reconstructed on the treated prism to allow safe passage for trailing or driving cattle. These travelways shall not exceed the width required to safely accommodate the permitted use, and should be outsloped to facilitate drainage. They should be closed at the road entrance to prohibit unauthorized motorized use. *During implementation of these treatments, coordination with the district range specialist is required.*

Parameters: On-site field evaluation of treatments will include one or more of the following:

- Visual evidence of surface coverage with ground cover, vegetation transplants, and mulching seeding in riparian areas,

- Establish photo points and take before (existing condition) and post treatment photos. Utilize GPS coordinates and/or a permanent reference point to ensure replicability of photo point.

- 100-pace heel to toe transects in conjunction with each photo point to determine amount and type of ground cover.

**If time and budget constraints do not allow for this method, the minimum monitoring will include replication of photo points and a qualitative description of the site recovery/trend.*

- Assessment of whether retained travelway has been effective at allowing for permitted use and associated impacts are confined to this travelway or if they are affecting the rest of the treated prism. Assessment of any evidence of frequent unauthorized use impacting travelway beyond the permitted use. Photos (with GPS point) and a narrative are sufficient for this purpose.

Methodology: Implementation monitoring will be accomplished through field verification of the planned treatments in selected roads, with emphasis placed on roads within riparian and/or sensitive areas (e.g., steeper slopes, sensitive soils). Where possible, document both qualitative and quantitative comparisons to pre-existing conditions. Photographs will be taken for comparison purposes. Effectiveness monitoring will be done at each photo point established during implementation using methods described above.

*This methodology may be adjusted as needed.

Frequency: Implementation monitoring will occur during the year of decommissioning activities. Effectiveness monitoring will occur at a minimum the first year after implementation and then at year 3 and 5 unless findings indicate sites have stabilized and re-vegetated to their natural potential.

Duration: Up to 5 years

Analysis: Field documentation, summarization of heel-to-toe transect data and on-site photographs before and after project implementation.

Report:	The written report will follow the format of the monitoring results data form developed on the Payette National Forest and be included in the annual monitoring result publication.
Responsible Official:	Council District Ranger
Prepared by:	Melanie Vining, West Zone Hydrologist
Date:	December 2015

Note: The road decommissioning itself could be done via contract or Forest crew (Force Account). If work is done via contract, monitoring report should also include an evaluation of the effectiveness of the contract language and oversight (COR, inspectors) at achieving desired results. This evaluation should be used as a tool by which to determine changes, if any, that could be made to improve contract specifications or administration for road decommissioning.

MONITORING PLAN SUMMARY SHEET

Program: Soil & Water

Activity, Practice or Effect: Project Monitoring, Timber Management, Implementation and Effectiveness Monitoring of Timber BMP's and SWCP's.

Project Name: Middle Fork Weiser River Landscape Restoration Project

Location: Council Ranger District, Granite Creek-Middle Fork Weiser River, Jungle Creek-Middle Fork Weiser River, Little Fall Creek-Middle Fork Weiser River, Mica Creek-Middle Fork Weiser River

Objectives:

1. Determine if BMP's, SWCP's (as included in the timber sale contract) and project design features are being implemented.

2. Determine if BMP's and SWCP's are effective.

3. Determine if specific design features identified in the NEPA document have been carried forward to the timber sale contract and implemented on the ground. Mitigations are listed in the mitigation tables under soil and water; some included in the table are listed below:

   a. Where necessary, construct slash filter windrows or utilize other erosion control methods as deemed appropriate by the district hydrologist or fisheries biologist in conjunction with the project engineer at the tow of fill slopes on newly constructed roads and landings. Slash filter windows constructed in RCAs should not be too large to allow for planting of native riparian vegetation following road construction.

   b. Tractor skidding and use of feller-bunchers and excavators is allowed on slopes up to 35 %. Limited use of tractors, feller-bunchers and excavators on slopes between 35% and 45% may be allowed with approval of a Forest Service Soil Scientist. Prioritize monitoring of units that allowed tractor and feller bunchers on 35% to 45% slopes.

   c. On slopes between 35% and 45% percent, restrict ground-based harvest equipment to designated areas at all times and require operators to winch logs to skidders.

d. On tractor units, all skid trails would be designated and pre-approved by the Timber Sale Administrator and logs would be winched to the designated skidtrails. Skidtrails would be spaced at a maximum distance (preferred is 200 feet or greater) with consideration given to terrain, and to RCA location (literature shows that a 100-foot skidtrail spacing has affects to soil on approximately 11% of an area).

e. Reclaim **all** skid trails after use by decompacting to 16 inches or depth of compaction, recontouring to natural slope profile and pulling slash over the trail surface to provide a minimum of 50% to maximum of 80% effective ground cover.

f. Field-validate slope gradients in specific harvest units. Enforce slope restrictions for ground-based equipment and feller buncher operations.

g. Ensure that no surface runoff is directly channeled into skyline corridors from landing areas. Stabilize disturbed areas by using waterbars, check dams, or placing slash in areas of exposed mineral soil.

h. Permanent and temporary roads, skid trails, and landings identified for obliteration would be decompacted a depth of 16” or the extent possible, recontoured, seeded with native seeds (where need is identified), and provided with a minimum of 50% to maximum of 80% ground cover (80% at stream crossings), vegetation transplants at a rate of 15 per 100 linear feet, natural mulch, CWD, and ag or wood straw, in that order of preference) to an extent deemed necessary by a fisheries biologist or hydrologist.

i. Re-use existing skid trails (as feasible) to limit creation of additional areas of DD and facilitate restoration of existing DD

j. Limit equipment operations to dry (<20% soil moisture) or frozen/snow covered conditions.

k. No equipment operation, new skid trails/roads or tree removal within 120 feet of intermittent channels and 240 feet of fish bearing intermittent or perennial channels unless equipment is on an existing road or skid trail and/or unless approved by fisheries biologist or hydrologist- utilize “RCA Thinning Guidelines” (Appendix 6 of the FEIS) for this project.

l. Avoid road and skid trail construction on landslide prone areas; no reserve tree or clear cut treatments in landslide prone areas

Parameters: Planned monitoring includes specific BMP and SWCP requirements for Watershed Management, Vegetation Manipulation, Timber, Roads and Trails. The special mitigation measures, identified in the NEPA document, will also be listed on the BMP checklist (See Objectives 3.a-l.).

Methodology: The BMP's and site-specific mitigation measures will be monitored through qualitative field observations and some quantitative measurements of slope and distance. Field forms and on-site photographs will be evaluated for reporting monitoring results.

The Zone Hydrologist or soil scientist and Sale Administrator will review the NEPA document and other appropriate documentation in the office. Any special mitigation measures will be listed on the BMP checklist. The BMP's will be visually inspected during harvest activities and at the end of the operating season. Sale Administrators Daily Diary Log and Engineering Reports will also be reviewed to ensure tracking and compliance.

*This methodology may be adjusted as needed.

Frequency: The majority of the monitoring will take place during harvest operations. Where re-vegetation or reclamation occurs, monitoring will need to be conducted twice, the first year for implementation and the second year for effectiveness, allowing one snowmelt and spring runoff to occur.

Duration: Two years, to be re-evaluated at that time**.**

Analysis: BMP monitoring forms, field notes, on-site photographs will be analyzed to answer the following questions:

	1. Which of the Soil and Water BMP's were implemented? 2. Which of the Soil and Water BMP's appear to be effective at this time? 3. Do any of the Soil and Water BMP's need to be modified or improved? 4. Were any special mitigation measures implemented, and do they appear to be effective at this time? Results will be used to validate contract compliance along with recommending any modifications needed for any BMP &/or SWCP practices. Recommendations may include additional mitigation measures to be completed, timing and application of BMP's, and actual construction modifications.
Report:	The report will follow the format of the monitoring results data form and published in the annual monitoring results publication
Personnel:	One GS-6 Hydro-Technician and one GS-11 Zone Hydrologist or GS-11 Soil Scientist.
Responsible Official:	Council District Ranger
Prepared by:	Melanie Vining, West Zone Hydrologist
Date:	December 2015

MONITORING PLAN SUMMARY SHEET

Program:	Soil
Activity, Practice or Effect:	Project Monitoring, Soil and Water Resource Improvement, Implementation of Treatments.
Project Name:	Middle Fork Weiser River – Long-term Soil Productivity (Coarse Woody Debris (CWD) Monitoring)
Location:	Council Ranger District, Granite Creek-Middle Fork Weiser River, Jungle Creek-Middle Fork Weiser River, Little Fall Creek-Middle Fork Weiser River, Mica Creek-Middle Fork Weiser River
Objectives:	Determine if CWD retention objectives have been met in mechanical treatment units (commercial and non-commercial vegetation removal) within the project area, as defined in Chapter 2 (description of Alternatives) and the Soils section of Chapter 3. Specifically, evaluate the amount and size class of CWD remaining in a unit after treatment in the context of Forest Plan Appendix A recommendations for that PVG.
Parameters:	A total of 9 randomly-selected harvest units (3 commercial thin, 3 reserve tree, and 3 biomass/large plantation) across the project area will be monitored using CWD transects (based on Brown 1974 and used in the Grays Creek Fire Salvage CWD monitoring (2008 EA/DN; Council Ranger District), with additional sites visited if specific resource concerns arise after initial monitoring. On-site field evaluation of treatments: 1. Review contract requirements as transferred from EIS project design features to timber sale contract- note consistency and clarity of contract specification 2. Follow CWD transect protocol, on file at Council Ranger District hydrology office for method and total number of transects per unit. 3. Take representative photo to depict CWD levels in unit
Methodology:	Implementation monitoring will be accomplished through field verification of the planned treatments. Where possible, document both qualitative and quantitative comparisons to pre-existing conditions. Photographs will be taken for comparison purposes. *Methodology may be adjusted as needed.

Frequency:	Monitoring will be done concurrently or immediately after harvest activities. The most effective timing would be while the sale is still active to take advantage of the opportunity to bring additional CWD into any units that are lacking.
Duration:	Year of harvest/treatment
Analysis:	Field documentation, summarization of transects by unit number (spreadsheet) and on-site photographs before and after project implementation.
Report:	The written report will follow the format of the monitoring results data form developed on the Payette National Forest and be included in the annual monitoring result publication.
Personnel:	GS-11 Soil Scientist
Responsible Official:	Greg Lesch, Council and Acting Weiser District Ranger
Prepared by:	John Dixon, Forest Soil Scientist
Date:	December 2015

MONITORING PLAN SUMMARY SHEET

Program:	Fire and Fuels
Activity, Practice or Effect:	Project Monitoring, Effects of Prescribed Fire on Plantations
Project Name:	Middle Fork Weiser River Landscape Restoration prescribed fire program
Location:	Council Ranger District, Granite Creek-Middle Fork Weiser River, Jungle Creek-Middle Fork Weiser River, Little Fall Creek-Middle Fork Weiser River, Mica Creek-Middle Fork Weiser River subwatersheds
Objectives:	Evaluate the effects of prescribed fire on plantations and measure the mortality
Parameters:	The following on-site field evaluation of treatments will be used: 1. Visual 2. Photo points establishment
Methodology:	Implementation monitoring will be accomplished through field verification pre and post treatment. Pre treatment photo points will be established in key areas to get the best representation of condition.
Frequency:	Monitoring will occur post burn, within 1 year of implementation.
Duration:	1 year
Data Storage:	District and/or Supervisor's Office files under Fire and Fuels, report accomplishments in FACTS data base
Analysis:	Field documentation and on-site photographs
Report:	The report will document pre and post conditions of plantation via field notes and photos.
Cost:	The total cost will be $720/year. This covers 2 days for two GS-7 Fuels Technicians and 2 days for a GS-9 Fuels Specialist to evaluate the data and write the report.
Personnel:	Two GS-7 Fuels Technicians and one GS-9 Fuels Specialist
ResponsibleIndividual:	West Zone Fire Management Officer
Responsible Official:	Greg Lesch, Council / Weiser District Ranger
Prepared by:	Christian Ramirez WZ Fuels Specialist
Date:	August 28, 2011

MONITORING PLAN SUMMARY SHEET

Program:	Range and Noxious Weeds
Activity, Practice or Effect:	Project Monitoring, Noxious Weed Inventory and Treatments
Project Name:	Middle Fork Weiser River Landscape Restoration Project
Location:	All areas of harvest activity, prescribed fire, road construction and decommissioning on the Council Ranger District, Middle Fork Weiser River Project Area
Objectives:	Inventory and treat noxious weed infestations prior to project implementation. Monitor effects of timber harvest, prescribed fire, road construction and decommissioning on existing noxious weed populations and potential new populations. Provide follow up monitoring and treatment to areas where infestations are found and treated.
Parameters:	All roads scheduled for obliteration will be inventoried and treated for noxious weeds pre and post project implementation. All roads scheduled to be constructed or improved for project activities will be inventoried and treated for noxious weeds pre and post construction. All gravel pit sites will be inventoried and treated pre and post material transportation. Records will be kept on where gravel is hauled within the project area so that follow up monitoring can take place on those sites and roads.
Methodology:	Monitoring will be accomplished through field inspections of the planned treatments including timber harvest, prescribed fire, gravel pit sites, and road construction/improvement/obliteration.
Frequency:	Immediately pre and post any project activities.
Duration:	Monitoring will continue up to 5 years.
Data Storage:	Council Ranger District, 2150 files.
Analysis:	Field inspections and documentation followed by treatment if necessary.
Report:	Annually
Cost:	For annual monitoring and weed treatments $20,000 per year.
Personnel:	One GS-7 Biological Science Technician, one GS-6 Biological Science Technician, one GS-5 Biological ScienceTechnician and one GS-11Rangeland Management Specialist

Responsible Individual:	West Zone Rangeland Management Specialist and Biological Science Technician
Responsible Official:	Greg Lesch, Council and Weiser District Ranger
Prepared by:	Andy Bumgarner, West Zone Rangeland Management Specialist
Date:	02/02/2015

Appendix 5
Riparian Conservation Area Thinning Guide

Riparian conservation areas (RCAs) will be treated with this project.

Treatment would apply to:

- Upland vegetation that occurs within the outer portion of an RCA, not riparian vegetation itself. *Note: Alternatives 2, 4, and 5 include a 15-acre understory thinning that will be done by hand in an inner RCA with the goal of reducing understory density near a larger shaded fuelbreak.*
- Conifers that are encroaching into aspen stands or the outer RCA of wet meadows (Alternatives 2 and 3) or both the inner/outer RCAs (Alternative 4 only).
- Treatments within and adjacent to aspen stands (e.g., 100 feet to the S and W and 50 ft to the N and E): conifers would be reduced to less than 25% cover.
- Treatments within wet meadow treatment areas: conifers would be reduced to less than 10% cover and all riparian hardwoods would be retained.
- Fuels that, when removed, will help reduce the mortality rate of overstory trees within the RCA when prescribed fire is implemented.

******Where these treatments overlap with stream RCAs 30% canopy cover would be retained.*

These actions, on a site-specific basis, are consistent with direction for upland vegetation desired conditions and RCAs in Appendices A and B, respectively, of the Payette National Forest Land and Resource Management Plan (Forest Plan) (USDA Forest Service 2003a). Treatments would be limited to thinning where at least a 30% canopy cover would be retained and would be developed in consultation with the District fisheries biologist and/or hydrologist (and a wildlife biologist for wet meadow treatments) to ensure riparian function is maintained. The maximum number of RCA acres that could be thinned with each action alternative can be found in Chapter 2 of the FEIS. The following guidelines will be used for RCA layout:

- For any water feature, there will be no mechanical treatment in actual riparian vegetation, and only the outer potion of the RCA will be treated. There will be a no-cut zone in the inner RCA and no equipment use in the remainder of the RCA unless approved in isolated cases by the District hydrologist or fisheries biologist.
- For an intermittent stream, thinning and limited equipment use may occur in the outer 60 feet of the RCA (furthest from the stream); the no-cut zone is a minimum 60 feet from the stream. See (Figure 1).
- For a perennial or intermittent fish-bearing stream, thinning and limited equipment use may occur in the outer 120 feet of the RCA (furthest from the stream); the no-cut zone is a minimum 120 feet from the stream. See (Figure 1).

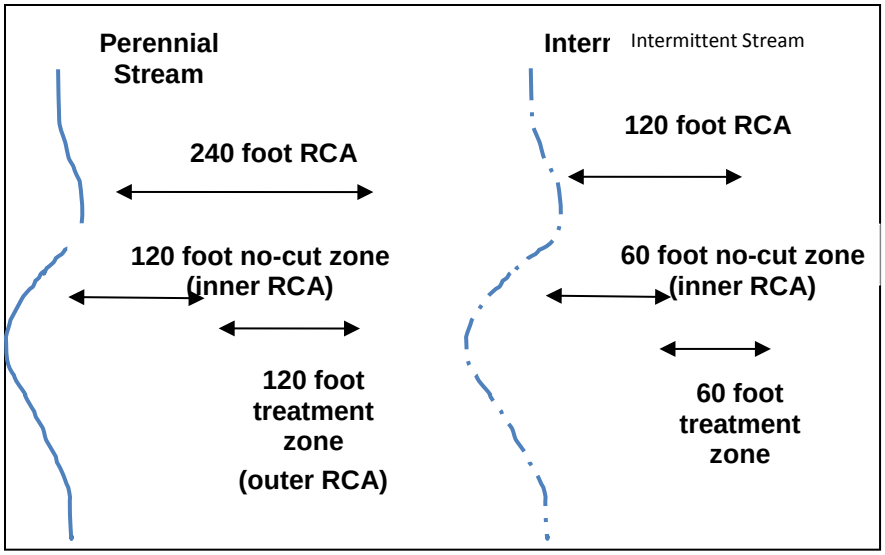

Figure 1. Diagram of no-cut and treatment zones for perennial and intermittent RCAs designated for thinning

Equipment use and harvest within the outer portion of the RCA will be limited as described below:

- Harvest must be accomplished using hand felling and an off-road jammer or skyline yarder to winch trees to existing roads or skid trails unless over frozen or snow-covered soils; the hydrologist or fisheries biologist must give site-specific approval for this, and this would not be allowed in wet meadow areas.
- *Existing* roads, skidtrails, and landings within the RCA (and then subsequently restoring them) may be used but require approval by the fish biologist or hydrologist and all skid trails and temporary roads will be obliterated after use. Many times, these existing roads, trails, and landings will be the best or only way to harvest in the RCA or the adjacent unit; however, alternative routes to remove the logs should be explored.
- New temporary road, skidtrail, and landing construction in an RCA <u>may</u> be approved by the fish biologist and/or district hydrologist if Forest Plan Standards for the SWRA resource can be met. These would be obliterated and restored after use and may include special mitigations.
- Skyline harvest over a stream is allowed only if full log suspension can be achieved over the stream channel.
- All mitigation measures and project design features as listed in Table 2.4-3 of this FEIS would apply.

Selection of Treatment Sites within RCAs:

- **For seeps** (wet areas characterized by riparian vegetation but limited in extent to saturated or wet soils and no channelized base flow): Flag and mark a 30-foot buffer around the edge (measured from the edge of hydric soils AND riparian vegetation). No harvest may occur within this boundary (Figure 2) unless approved of in advance by the District fisheries biologist and/or hydrologist and associated with aspen restoration.
- **For springs, ponds, and wetlands** (characterized by riparian vegetation and a more-or-less year-round base flow that is channelized at some point [spring] (Figure 3) or is characterized by flat topography and a shallow water table) (Brooks et al 1991). A 120-foot buffer will be flagged and marked around springs, ponds, and wetlands. Equipment restrictions are the same as for perennial streams as noted above. In some cases, where springs are tributary to a larger perennial stream—and are located close to, or within, the stream's RCA—incorporating them into the larger RCA and buffering around just the source of the spring may make sense (Figure 5).

In some RCAs it will not be possible to harvest up to the 60 foot or 120 foot no-cut zone due to topography or road/trail placement. Equipment may not be capable of reaching that far into the RCA from approved roads and trails. In these instances, the feasible boundary line should be flagged where it is possible to harvest using a jammer or skyline yarder (i.e., 75 feet away from an intermittent stream instead of 60 feet).

RCAs that are not practical to treat will be buffered at 120 feet for intermittent streams and 240 feet for intermittent fish-bearing and perennial streams; the maximum acres of RCA to be treated varies by alternative and will be limited to the selected alternative as described in the Record of Decision (ROD) for this project. Intermittent streams that are fish-bearing will be buffered as perennial streams.

During implementation, a map and description of the layout of the RCA portion of the unit would be provided to the fisheries biologist, hydrologist, or hydrologic technician, for field verification of the RCA treatment areas.

- NOTE: After 2010 floods, many stream channels in the project area are likely to be damaged and altered, either by excess deposition or erosion/incision. As RCAs are evaluated for treatment, buffer off the outer edge of the disturbed stream bank/scoured area if damage (i.e., raw, steep banks) to the channel has occurred (Figure 4). If the RCA has experienced excessive erosion from side slopes (e.g., overland flow, new or frequent gullies) do not consider the RCA a candidate for treatment or contact the fish biologist and/or hydrologist for a field visit. In addition, ephemeral channels may have "blown out" (Figure 4), while others remain intact (Figure 5). Please create unit boundaries that protect existing vegetation and "bank trees" along these channels. No RCA buffer is required along ephemeral channels. If it is not obvious whether a channel is intermittent or ephemeral because of recent erosion, contact the District hydrologist and/or fisheries biologist.

Figure 2. Seep—no channelized flow and dries up by mid-summer

Figure 3. Spring (source)—channel flowing right to left

Figure 4. Note newly-incised channel, likely an ephemeral channel before the last flood event. If these are frequent, and evidence of overland flow and erosion from side slopes is present, a Riparian Conservation Area may not be a good candidate for treatment

Figure 5. The two photos above show ephemeral channels—no damage, no defined bed and bank

Implementation:

All work within RCAs (i.e., harvesting, skid trail and landing rehabilitation slash chipping) should occur within the same season. Minimize ground disturbance in RCAs.

In certain cases, the main road in an area may be located on the outer edge of the RCA (between 200 and 240 feet for perennial or 100 and 120 feet for intermittent streams). In most cases it would be fine to use this road as the outer RCA boundary—pulling timber up to the road and harvesting above the road like a "regular" unit. *However, the layout crew should coordinate with the District fisheries biologist and/or hydrologist to ensure there are no site-specific concerns and specific mitigations, such as erosion control at relief culverts and on bare sections of fill slope, may be recommended.*

Appendix 6

Payette National Forest Land and Resource Management Plan

Appendix A

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INTRODUCTION

Appendix A contains the mapping criteria, classification descriptions, and desired condition tables for vegetation outside of designated wilderness areas. There are separate tables and/or narratives that relate to: (1) desired conditions for separate components of forested vegetation, (2) desired conditions for woodland and shrub types, and (3) desired conditions for riparian vegetation, including vegetation in riparian conservation areas (RCAs). Desired conditions do not represent a static state; they are dynamic because the ecosystems we are working with are dynamic. The desired conditions are not something that every acre of the Forest at every point in time will possess—there will always be spatial and temporal variability. However, achievement of desired conditions, well distributed across the planning unit, is a long-term goal of Forest management. For these reasons, the desired conditions are to be evaluated at either the 5th field hydrologic unit (HU) or activity area (for snags and coarse woody debris), depending on the vegetation component of interest. A scale other than watershed may be used where it is determined that a different reference area is more appropriate for identifying opportunities for a specific type of treatment. Further details on the development of desired conditions can be found in Chapter 3 of the Final EIS, Appendix B of the Final EIS (Analysis Process), and in the Technical Reports that are part of the project record for Forested Vegetation, Snags and Coarse Woody Debris, and Non-Forest Vegetation.

In many areas, our current conditions deviate strongly from our desired conditions; this deviation creates opportunities for managing vegetation. Even under careful management, though, it may take several decades for these areas to approach desired conditions, and there are steps along that path where managers will have to choose among several approaches to maintain or trend toward desired conditions. There may be many different paths to a common endpoint that meet different management objectives, each with their own set of trade-offs. This will be the challenge of ecosystem management in managing vegetation and trying to achieve desired vegetative conditions. As we move forward in this process, and we learn more from monitoring and scientific research, our desired conditions may change, or we may alter the paths we choose to achieve them. For these reasons, it is not possible to describe a completely prescriptive approach to desired conditions, but merely offer guidance in how to consider desired conditions.

In some cases, there may be exceptions to the vegetative desired conditions. These exceptions may occur as a result of management direction in other resource areas, or when site-specific conditions are not appropriate for the desired conditions. Oftentimes, Management Area direction may have different, but overriding goals and objectives. Each Management Prescription Category (MPC) may also have a different theme as to how we would achieve desired conditions. All of this information needs to be considered when we design our projects. The desired conditions are general conditions that can be modified at the local or project level based on site-specific biophysical conditions.

DESIRED VEGETATION CONDITIONS

Forested Vegetation

Several tables below describe individual components of forested vegetation and their desired conditions. Table A-1 displays the Forested Potential Vegetation Groups. Forested vegetation refers to land that contains at least 10 percent crown cover by forest trees of any size, or land that formerly had tree cover and is presently at an earlier seral stage. Forested vegetation is described using habitat types, which use

potential climax vegetation as an indicator of environmental conditions. At the level of the Forest Plan, forested habitat types have been further grouped into potential vegetation groups (PVGs) that share similar environmental characteristics, site productivity, and disturbance regimes. Additional information on PVGs is available in the section entitled Vegetation Classification and Mapping in this Appendix.

Table A-1. Forested Potential Vegetation Groups[1]

Potential Vegetation Group
PVG 1 – Dry Ponderosa Pine/Xeric Douglas-fir
PVG 2 – Warm Dry Douglas-fir/Moist Ponderosa Pine
PVG 3 – Cool Moist Douglas-fir
PVG 4 – Cool Dry Douglas-fir
PVG 5 – Dry Grand Fir
PVG 6 – Cool Moist Grand Fir
PVG 7 – Cool Dry Subalpine Fir
PVG 8 – Cool Moist Subalpine Fir
PVG 9 – Hydric Subalpine Fir
PVG 10 – Persistent Lodgepole Pine
PVG 11 – High Elevation Subalpine Fir

[1] Forested vegetation refers to land that contains at least 10 percent crown cover by forest trees of any size or type, or land that formerly had tree cover and is presently at an earlier seral stage.

Tree Size Class

Tree size class is determined by the size of the overstory trees. The average diameter of the trees in the overstory or uppermost tree layer determines the stand's tree size class. A canopy layer has a distinct break in height, and must have a non-overlapping canopy closure of at least 10 percent. A few individual trees (such as relic trees) representing a distinctly different tree size are not recognized as defining a distinct canopy layer if the total canopy cover of those trees is less than 10 percent. Tree size class can also be determined from aerial photos by interpreting the average crown diameter of the overstory trees. For example, if the overstory trees average 22 inches diameter at breast height (DBH), then the stand is classified as a large tree size class, regardless of the size of trees that may occur in understory layers. Within any canopy layer diameter may vary considerably between individual trees.

Tree size class is based on the following diameter groupings:

- Grass/Forb/Shrub/Seedling < 4.5 feet tall
- Sapling 0.1" – 4.9" DBH
- Small trees 5.0" – 11.9" DBH
- Medium trees 12.0" – 19.9" DBH
- Large trees >20" DBH.

Table A-2 displays the desired amounts for each tree size class at the Forest-wide and 5th field HU scales. This table shows, for each PVG, a range in the percent of an area's forested vegetation desired for each tree size class. The range for each size class reflects the dynamic development of trees, considering growth rates, the type and extent of disturbances, and varying growing conditions.

The range in Table A-2 was developed from estimates of the historical range of variability (HRV). The low end of the large tree size class range is based on half the low end of HRV, provided that the minimum value does not fall below 20 percent. The upper end of the range for large trees is equal to the mean HRV value. The 20 percent value is a threshold that represents the minimum percent of a landscape area retained in the large tree size class because it is deemed necessary for assuring the viability of terrestrial wildlife species. The range for the Grass/Forb/Shrub/Seedling growth stage is based on the range of large trees and the time interval needed for this growth stage to advance to the next tree size class. The information presented in Table A-2 represents the full range of desired conditions for tree size classes encompassed by all Management Prescription Categories.

Table A-2. Forest-wide Range of Desired Size Classes Expressed as Percentage of Forested Vegetation Within Each PVG
(Includes forested vegetation in RCAs)

Tree Size	PVG 1	PVG 2	PVG 3	PVG 4	PVG 5	PVG 6	PVG 7	PVG 8	PVG 9	PVG 10	PVG 11
G/F/S/S	1 – 18	5 – 7	9	14 – 15	3 – 7	7 – 9	7 – 16	15 – 17	13 – 15	16 – 23	9 – 15
Saplings	2 – 12	3 – 7	9	7 – 9	3 – 7	7 – 9	11 – 15	11 – 15	8 – 15	11 – 16	14 – 15
Small	2 – 18	5 – 21	18 – 27	19 – 22	4 – 22	11 – 27	21 -- 22	22 – 23	17 – 22	46 – 48	19 – 22
Medium	3 – 29	7 – 35	23 – 36	24 – 36	7 – 30	18 – 36	32 – 36	28 – 29	25 – 29	20	22 – 38
Large	24 – 91	30– 80	20 – 41	20 – 34	33 – 84	20 – 56	20 – 21	20 – 21	20 – 37		20 – 27

Similar to Table A-2, Table A-3 displays a portion of the desired ranges for the Grass/Forb/Shrub/Seedling and large tree size classes at the Forest-wide and 5th field HU scales. This table shows only that portion of the range that falls within the estimated HRV and thus presents only the HRV portion of desired condition range that is displayed in Table A-2. The low end of the large tree range is based on the low end of HRV, provided that the minimum value does not fall below 20 percent. The upper end of the range for large trees is equal to the mean HRV value. The upper end of the desired condition range is the same in Tables A-2 and A-3. The 20 percent minimum value in Table A-3 is the same as that shown in Table A-2 -- it represents the minimum percent of a forested landscape area that should remain in the large tree size class to ensure the viability of terrestrial wildlife species. The range for the Grass/Forb/Shrub/Seedling growth stage is based on the range of large trees and the time interval needed for this growth stage to advance to the next tree size class. The ranges in tree size classes in Table A-3 displays the desired condition encompassed by all Management Prescription Categories except MPC 5.2.

Table A-3. Desired Percentage Ranges for Size Classes of Forested Potential Vegetation Groups, Outside of MPC 5.2 (Includes forested vegetation in RCAs)

Tree Size	PVG 1	PVG 2	PVG 3	PVG 4	PVG 5	PVG 6	PVG 7	PVG 8	PVG 9	PVG 10	PVG 11
G/F/S/S	1 – 12	4 – 5	9	14 – 15	3 -- 4	7 – 8	7 – 16	15 – 17	13	16 – 23	9 – 15
Large	47 – 91	59– 80	23 – 41	20 – 34	66 – 84	28 – 56	20 – 21	20 – 21	31 – 37	20	20 – 27

Note: References to PVG 10 in the above table is to be applied to the Medium Tree Size Class (overstory trees average diameter ranges from 12.0 to 19.9 inches diameter breast height). The overstory trees in PVG 10 stands (persistent lodgepole) generally do not attain an average diameter within the large tree size class (≥ 20.0 inches diameter breast height) even though individual trees may equal or exceed 20 inches in diameter.

Table A-4 displays a portion of the desired ranges for the Grass/Forb/Shrub/Seedling and large tree size classes at the Forest-wide and 5th field HU scales. This table shows only that portion of the range that falls outside of the estimated HRV and thus presents only a portion of the desired condition range that is displayed in Table A-2. The part of the desired condition range applies to those areas allocated to Management Prescription Category 5.2 where timber production is an emphasis. The low end of the large tree size class range in Table A-4 is the same as in Table A-2 -- it is based on half the low end of HRV provided that the minimum value does not fall below 20 percent. The upper end of the range for large trees is equal to the low end of HRV for large trees. It should be noted that for several PVGs the requirement that a minimum of 20 percent of the forested landscape be retained in the large tree size class results in conditions that fall within the estimate Historical Range of Variability. This is true for PVGs 4, 7, 8, 10, and 11 where the low end of the range is at or below 20 percent. The reason for requiring the 20 percent minimum value in Table A-4 is the same as in Tables A-2 and A-3 -- it represents the minimum percent of a forested landscape area that should remain in the large tree size class to ensure the viability of terrestrial wildlife species.

Table A-4. Desired Percentage Ranges for Size Classes of Forested Potential Vegetation Groups, Within MPC 5.2

Tree Size	PVG 1	PVG 2	PVG 3	PVG 4	PVG 5	PVG 6	PVG 7	PVG 8	PVG 9	PVG 10	PVG 11
G/F/S/S	13 – 18	5 – 7	9	15	4 – 7	8 – 9	7	15	13 – 15	16	9
Large	24 – 46	30– 58	20 – 22	20	33 – 65	20 – 27	20	20	20 – 30	20	20

Note: References to PVG 10 in the above table is to be applied to the Medium Tree Size Class (overstory trees average diameter ranges from 12.0 to 19.9 inches diameter breast height). The overstory trees in PVG 10 stands (persistent lodgepole) generally do not attain an average diameter within the large tree size class (≥ 20.0 inches diameter breast height) even though individual trees may equal or exceed 20 inches in diameter.

The desired range of the Grass/Forb/Shrub/Seedling tree size class is also displayed and was developed in the same manner as in the two tables above. The desired range of the Grass/Forb/Shrub/Seedling tree size class varies between the three tables (A-2, A-3 and A-4) because of the percent of large tree size class range associated with MPCs and the time interval needed for trees to develop from the Grass/Forb/Shrub/ Seedling tree size class to the Sapling tree size class.

For example, PVG 7 has a desired range for large trees that is essentially the same regardless of MPC (20 percent in Table A-4 and 20–21 percent in Table A-3); however, the range of the Grass/Forb/Shrub/ Seedling tree size class is limited to 7 percent in MPC 5.2, while in all other MPCs the range varies from 7 to 16 percent. This wider range occurs in the MPCs other than 5.2 because a significant portion of PVG 7 occurs in MPCs (1.2, 3.1, and 4.1). These MPCs emphasize passive management strategies that would generally have the Grass/Forb/Shrub/Seedling tree size class developing into the Sapling tree size class over a longer time period than under active management in MPC 5.2. This time interval is estimated to be three times longer (30 years versus 10 years) under MPCs 1.2, 3.1, and 4.1 than under 5.2. The result is that the range of the Grass/Forb/Shrub/Seedling tree size class is greater in Table A-3 for PVG 7, even though the range of desired large tree size class is essentially the same regardless of MPC. In other PVGs this same relationship may not hold true because either the range of desired conditions for the large tree size class is substantially different, or there is only a small percentage of a PVG in an MPC requiring longer time intervals, or both.

Although current conditions may prevent us from obtaining desired condition for quite some time, over a longer period (perhaps more than 100 years) management actions should result in forested vegetation that is approaching Forest-wide desired conditions for tree size classes, when all of the 5th field HUs are averaged together. The 5th HU is deemed an appropriate analysis unit for evaluating project-level contributions because mid-scale data and other information is generally available or is feasible to generate. This scale also coincides with other scales of analysis that may be undertaken before or as part of project-level planning. The 5th field HU also facilitates a good distribution of desired components across the Forest.

Canopy Closure

As previously mentioned the overstory or uppermost tree layer determines the tree size class, for a stand or other area delineated for management actions. Trees that compose a distinct break in height determine the canopy layer, and these trees must have a non-overlapping canopy closure of at least 10 percent. A few individual trees (such as relic trees) representing a distinctly different tree size are not recognized as defining a distinct canopy layer if the total canopy cover of those trees is less than 10 percent. These trees are instead included with the trees in the size class that are closest to their own size.

Canopy closure classes are based on the following:

- Low = 10-39% canopy closure
- Moderate = 40-69% canopy closure
- High = 70% or more canopy closure

Canopy closure may be determined through ocular estimates from aerial photo interpretation or while conducting stand exams. Canopy cover as expressed here represents total non-overlapping crown closure of all trees in a stand except for trees in the seedling size class. Trees in the seedling size class are used to estimate canopy closure only when they represent the only structural layer present.

For example, if the average diameter of the overstory trees is >20” DBH, then the stand is classified as being in the large tree size class, regardless of what size trees comprise other canopy layers that may be present in the understory. This is to be interpreted such that, in the 5th field HU of concern, the area occupied by stands classified as being in the large tree size class, for each potential vegetation group, should fall within the ranges indicated for each canopy closure class, or show that management actions will assist a PVG in moving towards a size class distribution within the ranges over the long-term.

Table A-5 displays the desired condition for canopy closure for the large tree size class associated with the large tree desired ranges displayed in Table A-3 above. This is the desired condition for all MPCs except 5.2.

Table A-5. Desired Percentage Ranges for Canopy Distribution within the Large Tree Size Class, Represented by Canopy Closure Classes – Outside of MPC 5.2
(Includes vegetation in RCAs)

Canopy Closure	PVG 1	PVG 2	PVG 3	PVG 4	PVG 5	PVG 6	PVG 7	PVG 8	PVG 9	PVG 10	PVG 11
Low	80-100	74 - 94	5 - 25	0 - 14	25 - 45	0 - 20	0 - 14	0	0	0	0 - 16
Moderate	0 -20	6 - 26	75 - 95	87-100	55 - 75	80-100	86-100	51 - 71	51 - 71	81-100	84-100
High	0	0	0	0	0	0	0	39 - 49	39 - 49	0 - 19	0

Note: References to PVG 10 in the above tables are to be applied to the Medium Tree Size Class (overstory trees average diameter ranges from 12.0 to 19.9 inches diameter breast height). The overstory trees in PVG 10 stands (persistent lodgepole) generally do not attain an average diameter within the large tree size class (= 20.0 inches diameter breast height) even though individual trees may equal or exceed 20 inches in diameter. Canopy closure classes are as follows: Low is 10-39%; Moderate is 40-69%; and High is >70%.

Table A-6 displays the desired condition for canopy closure for the large tree size class associated with the large tree desired ranges in Table A-4 above. This is the desired condition for MPC 5.2.

Table A-6. Desired Percentage Ranges for Canopy Distribution within the Large Tree Size Class, Represented by Canopy Closure Classes – Within MPC 5.2

Canopy Closure	PVG 1	PVG 2	PVG 3	PVG 4	PVG 5	PVG 6	PVG 7	PVG 8	PVG 9	PVG 10	PVG 11
Low	80-100	4-24	0-20	0-20	3-23	0-20	23-43	0	0	0	57-77
Moderate	0 -20	76-96	80-100	80-100	77-97	80-100	57-77	30-50	30-50	81-100	23-43
High	0	0	0	0	0	0	0	50-70	50-70	0 - 19	0

Note: References to PVG 10 in the above tables are to be applied to the Medium Tree Size Class (overstory trees average diameter ranges from 12.0 to 19.9 inches diameter breast height). The overstory trees in PVG 10 stands (persistent lodgepole) generally do not attain an average diameter within the large tree size class (≥ 20.0 inches diameter breast height) even though individual trees may equal or exceed 20 inches in diameter. Canopy closure classes are as follows: Low is 10-39%; Moderate is 40-69%; and High is >70%.

Although current conditions may prevent us from obtaining desired condition for quite some time, over a longer period (perhaps more than 100 years) management actions should result in forested vegetation that is approaching Forest-wide desired conditions for canopy closure, when all of the 5th field HUs are averaged together.

Species Composition

Table A-7 displays the desired condition ranges for forested vegetation species composition at the Forest-wide scale. Scales below the Forest-wide level are not expected to mirror these values because of the specific mix of habitat types that are present in individual analysis areas. For example, for PVG 1, the desired range of 96-99 percent ponderosa pine would be attained when evaluated at the Forest-wide scale.

The remainder of PVG 1, up to 4 percent of the area, would be any other combination of tree cover. For an individual 5th field HU, the proper species "mix" would be determined by the dominant management prescription categories (MPCs) for that watershed, and other concerns such as wildlife or wildland/urban interface.

Table A-7 represents the Forest-wide desired species composition across all size classes, as adapted from the Historical Range of Variability of the Idaho Southern Batholith Ecosystem (Morgan and Parsons 2001). Individual species represented by an asterisk (*) were not explicitly modeled during the development of the Historical Ranges of Variability. They were not included because they occur in habitat types that represent only a minor part of the PVGs within the Idaho Southern Batholith, or because of little information known about their historical occurrence within a PVG. This latter reason was often the case with quaking aspen.

The appropriate species composition for the 5th field HU being analyzed may vary from this table based on the mix of habitat types present. For project application it is necessary to determine the mix of habitat types that comprise the PVGs within the 5th field HU analysis area. For this usually more limited set of habitat types, describe the desired species composition that will achieve the goals of having landscapes dominated by early seral species that are better adapted to site conditions, and are usually more resilient to disturbances such as fire. The desired range of species in Table A-7 is evaluated for Forest-wide monitoring.

Table A-7. Desired Percentage Ranges for Species Composition of Forested Potential Vegetation Groups, For Forest-wide Evaluation

Species	PVG 1	PVG 2	PVG 3	PVG 4	PVG 5	PVG 6	PVG 7	PVG 8	PVG 9	PVG10	PVG11
Aspen	*	*	1-11	4-13	*	*	6-11	*	*	*	*
Lodgepole pine		*	*	10-20	*	1-5	28-42	25-34	29-37	82-94	18-25
Ponderosa pine	96-99	81-87	26-41	*	80-88	23-41	*				
Western larch					0-1	15-29	*	9-16	*		
Whitebark pine										*	32-47
Douglas-fir	0-2	10-16	47-69	66-81	7-17	15-25	24-34	23-37	*	*	
Englemann spruce					*	0-2	3-5	10-17	28-33	*	8-13
Grand fir					0-1	9-23	*				
Subalpine fir						0-3	12-21	11-17	29-33	*	18-29

Note: Use this table as a reference. For project purposes describe the desired species composition for the 5th field HU based on species composition of the habitat types present within the 5th field HU analysis area. Refer to the appropriate habitat type guide for the analysis area when determining the correct species mix including those species that may occur as accidentals.

Snags and Coarse Woody Debris

Snags and coarse woody debris are much finer-scale elements than vegetation components such as species composition, size class, and canopy closure. As such, they are to be evaluated during project planning for the activity area, which better reflects the scale at which to consider these elements and to plan projects that provide for maintaining or improving trends in snag and coarse wood amounts. The activity area for snags and coarse woody debris is the specific site affected, whether the effects are positive or negative. Actions affecting activity areas that need to be assessed include timber harvest, reforestation, timber stand improvement, and prescribed fire activities.

Snags and coarse wood are known to fluctuate both spatially and temporally. Snags are often found in clumps, whereas coarse wood recruitment over time may form from clumped snags. Coarse wood may move around on the landscape, often resulting in a more even distribution than snags. These tables are not meant to provide an even distribution of snags and coarse wood across every acre of the forested landscape, but to provide numbers that serve as a guide to approximate an average condition for an activity area.

Management actions should result in both short-term and long-term replacement of snags by retaining sufficient number of live trees, including those with broken tops, cavities, lightning scars, dead portions, etc. as future recruitment. Rely on site specific information, normal mortality rates, and experience with mortality of residual trees following vegetation management activities when determining the number of trees needed to provide for future snag recruitment.

Localized differences may also occur. For example, on certain habitat types, such as PVG 7 being managed for lodgepole pine as the early seral species, it may be difficult to have an abundance of material in the greater 20" DBH classes, primarily due to the smaller size generally attained by lodgepole pine trees. There may also be cases where local site conditions do not represent the conditions described by the Potential Vegetation Group. Such situations include broad ecotones between forest and non-forest communities, very shallow or highly disturbed soils like those that have resulted from some past mining activities, or other localized conditions that have affected the site potential. These differences should be documented during project design. Furthermore, although the best available science was used to determine desired condition values, new scientific information and monitoring studies may display that adjustments are needed in the numbers.

On a landscape or watershed level, certain areas can have very high snag/coarse wood numbers, while others may be much lower. At some point in time, areas that have low numbers may have a drastic increase due to a disturbance event, while a young regenerating forest that previously had high snag numbers may not have many current snags, but could have high tonnages of coarse wood left over from the previous stand and its disturbance event. Ecosystems and landscapes are dynamic; our intent is not to create a static condition on every acre, but to incorporate those dynamics into our implementation, while using management tools to improve conditions when necessary, or maintain those conditions that provide for desired components.

When planning an activity, the intent is to either maintain a desired condition, or to trend toward the desired condition. If an area is already within the range of desired conditions, a management action should either keep the area within the desired ranges, or when the action results in moving outside the range, a mechanism to move you back into the range needs to be provided. An example of this would be a prescribed burn that would burn some of the coarse woody debris, but would also create mortality of trees, which would become snags and future coarse woody debris. If an area is above or below the desired range, it may not be possible to meet the desired ranges over the short term. However, actions can be taken to trend toward the desired ranges. This would include leaving some portion of the snags and coarse woody debris that are available, although perhaps not enough to meet desired ranges. Another example is an action that over the long term produces larger size class trees, which would eventually become large snags and coarse woody debris.

Tables A-8 and A-9 display the desired ranges for snags and coarse woody debris that contribute toward wildlife habitat and long-term soil productivity.

Desired numbers were developed for each PVG so that the numbers would be reflective of productivities and disturbance regimes. Agee (2002) presents several diagrams that depict the spatial and temporal variability found in snag/coarse wood numbers, according to the fire regimes of different forest types.

Table A-8. Desired Range of Snags Per Acre for Potential Vegetation Groups

Diameter Group	PVG 1	PVG 2	PVG 3	PVG 4	PVG 5	PVG 6	PVG 7	PVG 8	PVG 9	PVG 10	PVG 11
10" – 20"	0.4-0.5	1.8-2.7	1.8-4.1	1.8-2.7	1.8-5.5	1.8-5.5	1.8-5.5	1.8-7.5	1.8-7.5	1.8-7.7	1.4-2.2
Greater than 20"	0.4-2.3	0.4-3.0	0.2-2.8	0.2-2.1	0.4-3.5	0.2-3.5	0.2-3.5	0.2-3.0	0.2-3.0	**NA**	1.4-2.2
Total	0.8-2.8	2.2-5.7	2.0-6.9	2.0-4.8	2.2-9.0	2.0-9.0	2.0-9.0	2.0-10.5	2.0-10.5	1.8-7.7	2.8-4.4
Minimum Height	**15'**	**30'**	**30'**	**30'**	**30'**	**30'**	**30'**	**30'**	**30'**	**15'**	**15'**

Note: This table is not meant to provide an even distribution of snags across every acre of the forested landscape, but to provide numbers that serve as a guide to approximate an average condition for an activity area.

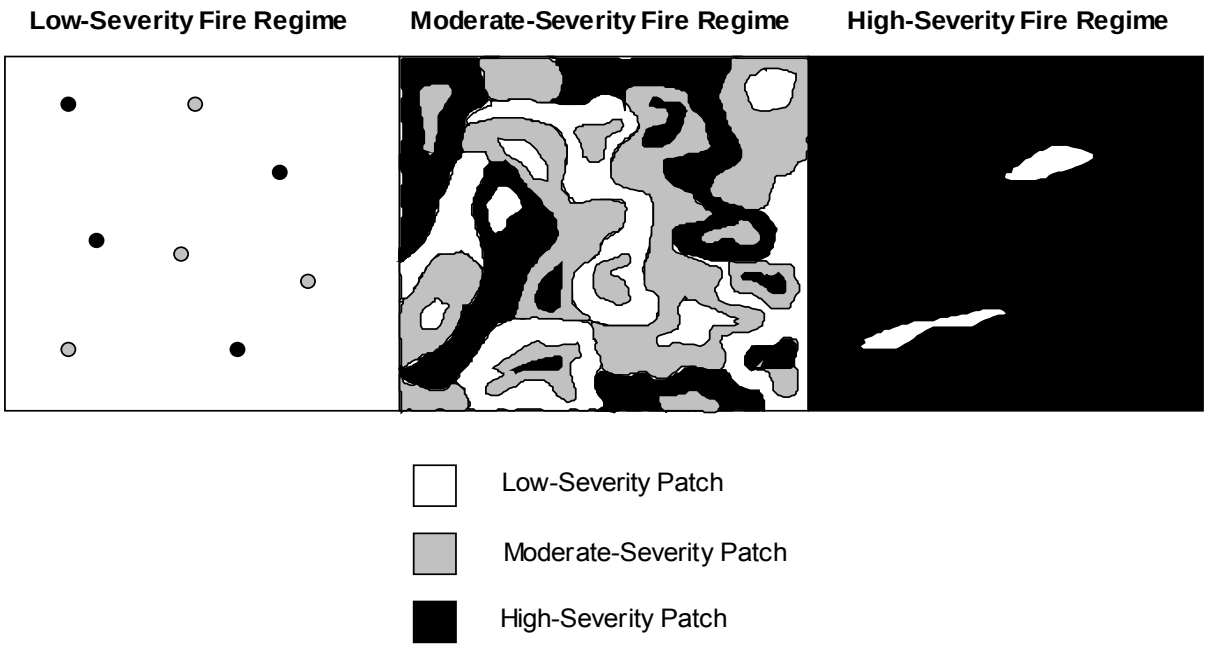
According to Agee, the landscape ecology of historical fire regimes is a function of place. Low-severity fire regimes had small patches and little edge, while high-severity regimes had the largest patch sizes and moderate edge. Moderate- or mixed-severity fire regimes had intermediate patch sizes and maximum amounts of edge. See Figure A-1.

Table A-9. Desired Range of Coarse Woody Debris, in Tons Per Acre, and Desired Amounts in Large Classes for Potential Vegetation Groups

Indicator	PVG 1	PVG 2	PVG 3	PVG 4	PVG 5	PVG 6	PVG 7	PVG 8	PVG 9	PVG10	PVG11
Dry weight (Tons per ac.) in Decay Classes I and II	3 – 10	4 – 14	4 – 14	4 – 14	4 – 14	4 – 14	5 – 19	5 – 19	5 – 19	5 – 19	4 – 14
Distribution[1] >15"	>75%	>75%	>65%	>65%	>75%	>65%	>50%	>25%	>25%	>25%	>25%

Note: The recommended distribution is to try to provide coarse wood in the largest size classes, preferably over 15" in DBH, which provide the most benefit for both wildlife and soil productivity. This table is not meant to provide an even distribution of coarse wood across every acre of the forested landscape, but to provide numbers that serve as a guide to approximate an average condition for an activity area.

Figure A-1. Patch Dynamics of Fire Regimes (Agee 1998)

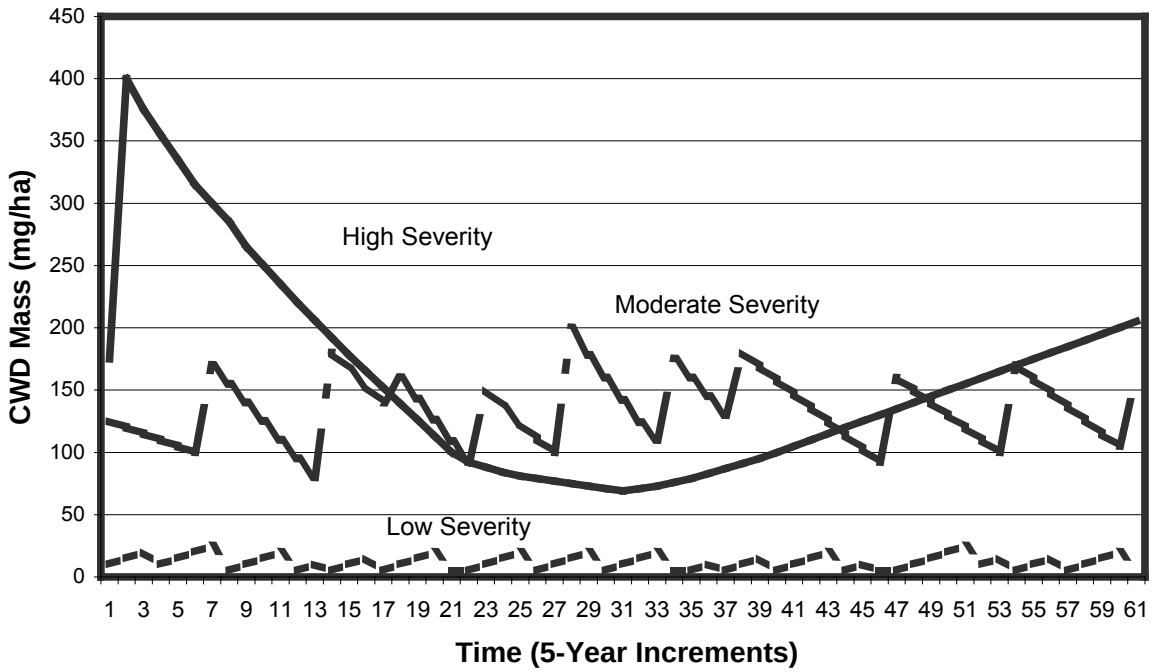


Agee (2002) also discusses how coarse woody debris dynamics (snags plus logs) have historically varied by fire regime (Figure A-2). In low-severity fire regimes, frequent, low-intensity fires limited coarse woody debris. His graph displays the fluctuations found in low-severity fire regimes, where levels will reach a peak, and then cycle downwards. As this graph displays, the peaks may be as high as 30-35 mg/ha (approximately 13-16 tons/acre), and the lows could be less than 1 mg/ha (approximately 0.5 tons/acre). The average on these graphs is probably somewhere around 5 tons (Graham pers. comm. 2001). Although fires were frequent, they rarely affected every acre. In moderate-severity fire regimes, fires both consumed and created coarse woody debris several times a century (Agee 2002). In high-severity fire regimes, a "boom-and-bust" dynamic operated: substantial coarse woody debris creation after a stand replacement fire, followed by a century or more without further substantial input.

These graphics represent well the spatial and temporal cycling of coarse woody debris and the patch dynamics at which they operate. Therefore, it is important to understand the dynamics of the particular PVG that a project is in, to best determine desired levels. In some PVGs, snags and coarse woody debris come as pulses over time (see Figure A-2). There may be little dead material available until a disturbance event, at which time levels may far exceed these desired conditions; over time levels will approach desired conditions, eventually recycling back to the first condition with little dead material.

Although snags and coarse woody debris are managed at the activity area, it is useful to have some knowledge of the larger landscape area to assist in determining the appropriate number and amount that fall within the desired ranges described in Tables A-8 and A-9. For example, in a watershed that has had large recent fires, there are probably an abundance of snags, therefore, project contributions may not be as important. In a heavily managed watershed, project contributions to snag and coarse wood levels may be more important than in a watershed with little active management. Areas with many roads may have higher impacts to snags from firewood gathering activities; therefore, scheduled projects may need to contribute higher levels within the desired range, to balance out effects that may or may not be directly related to the project.

Figure A-2. Temporal Cycling of Coarse Woody Debris by Fire Regime (Agee 2002)



To assist in determining the appropriate amounts of snags and course wood to manage for, it is also important to utilize the historical fire regimes that are typically found in each PVG. Table A-10 illustrates the historic fire regime by PVG.

Table A-10. Historical Fire Regimes For Forested Potential Vegetation Groups

Potential Vegetation Group	Historical Fire Regime
1-Dry ponderosa pine – Xeric Douglas-fir	nonlethal
2-Warm, dry Douglas-fir – moist ponderosa pine	nonlethal
3-Cool, moist Douglas-fir	mixed1-mixed2
4-Cool, dry Douglas-fir	mixed1-mixed2
5-Dry grand fir	nonlethal-mixed1
6-Cool, moist grand fir	mixed1-mixed2
7-Warm, dry subalpine fir	mixed2
8-Warm, moist subalpine fir	lethal
9-Hydric subalpine fir	lethal
10-Persistent lodgepole pine	lethal
11-High elevation subalpine fir	mixed2

Many of our forest stands will not be able to meet desired conditions for many decades. In many instances, the desired conditions cannot be met at this point in time, or within the 10-15 year planning period. The desired conditions presented in Tables A-8 and A-9 may not occur in young and many intermediate aged stands. This is part of the temporal variability in the numbers of snags and coarse woody debris. As we move toward desired conditions in large tree size, canopy closure, and species composition, so will we also move toward the desired conditions for snags and coarse wood. An area or group of stands may be within desired conditions in this 50-year period, and in the next 50-year period they may fall outside the range of desired conditions, while an adjacent area moves into the desired condition ranges. Vegetation within landscapes is dynamic, and it is anticipated that desired conditions will be achieved in a dynamic fashion.

In seedling, sapling, and small tree size stands, it may be difficult to have large-diameter snags and coarse woody debris. In this case, some of the tonnage and snag numbers can be in smaller size classes. However, it is not expected that the total amounts will be made up in smaller size classes. But there will be opportunities to trend toward the desired ranges. An example would be in a stand dominated by 6”-12” DBH trees. In a thinning operation, we would want to leave some distribution of material that falls within the range of size classes available, with preponderance toward the larger (12” DBH) trees. However, the amount of material retained that is less than 6” diameter should be balanced against the fire hazard that it, and the finer material that often comes with it, may create.

Several different factors determine the potential fire hazard created by surface fuels including kind, depth, continuity, extent, connectivity to overstory vegetation, and adjacent fuels. The risk of creating a potentially hazardous condition should also be considered relative to the management objectives for the area. For example, the willingness to accept risk associated with retaining material in the smaller class may be much different for a wildland/urban interface area than in an isolated site adjacent to wilderness. In addition, juxtaposition of the area within the landscape relative to fuel breaks and vegetative mosaics can help frame risk to the landscape at large. In a stand of primarily 3”-6” DBH trees, it would be difficult to come close to desired ranges based on concerns about that sized material. In these cases, our activities should reflect a trend toward creating larger material, which ties in with the desired conditions for large trees as well. For these reasons, we have included size class distributions for both snags and coarse woody debris.

Another reason to reduce reliance on small size classes for coarse woody debris is that our primary objective is to provide the majority of the wood in the large (>15” diameter) size class, as this material is retained on site longer. As stated above, some small and intermediate stage stands will not have the larger material available, and the expectation is not to compensate with an abundance of material in the small and medium size classes. However, if that is all there is available, some material should be left in those size classes to assist with long-term soil productivity. Brown et al. (2001) indicate that on sites where most of the coarse wood loading is comprised of larger pieces (>15” diameter), there is less of a hindrance to using prescribed fire. Conversely, leaving excessive material in the 3-6” diameter size class could hamper prescribed fire efforts in the future by creating conditions where fire would not achieve desired effects.

Spatial distribution of snags and coarse wood is also important. It would not be desirable for all the dead material in a watershed to be clumped into one corner, and the remainder of the area to have very little or no material. Snags are generally found in clumps, and the watershed would have groups of clumps throughout. This is why the activity area was chosen as the distribution unit. Within an activity area, snags should be provided in patches or more uniformly, depending on what is appropriate for the PVG. Snag patches should be distributed across the activity areas rather than clumped together in a portion of the activity area. Coarse woody debris is generally somewhat more evenly distributed. Within an activity area, distribution for coarse wood should reflect historical disturbance regimes appropriate for the PVG.

When implementing a project, document how the project maintains or trends toward the desired conditions.

Management treatments may not produce all the dead material in the amounts and/or decay classes desired in a single action. However, treatments should be designed to provide structural, compositional, and functional elements that contribute to long-term sustainability of snags and coarse wood. In many cases, actions will consume coarse wood (e.g., prescribed fire). However, if the action results in the development of large trees, this will contribute to providing the desired levels of large snags and coarse woody debris over time.

Historical fire regimes, particularly the non-lethal and mixed1 regimes, continually recycled material. Larger material may take several fire cycles before it is fully consumed. This constant recycling also helps to provide a variety of decay classes, another important component of achieving desired conditions. Some wildlife species prefer hard snags, while others prefer those with more decay. Therefore management actions should result in a variety of snag and coarse wood decay classes. Only decay classes I and II count towards the desired amounts, to provide for continual recruitment into decay class III. The goal is to provide coarse woody debris in decay class III, because this material is eventually incorporated into the soil.

Vegetative Hazard and Wildfire

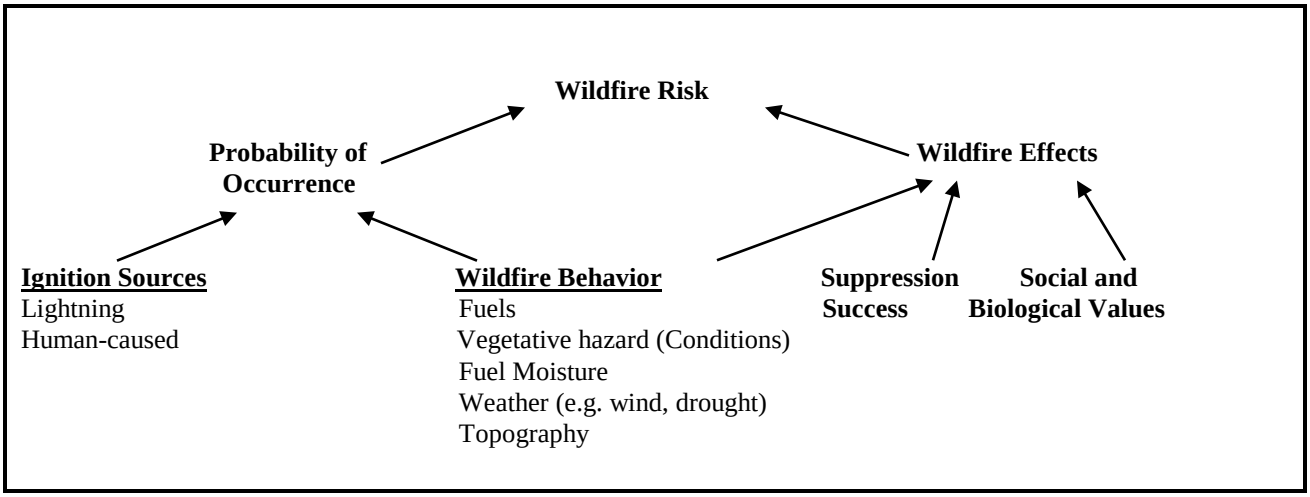
Vegetative desired conditions are directly related to vegetative hazard conditions in that they both define conditions that can occur on the landscape. In non-lethal and mixed1 fire regimes, conditions closest to historical are expected to reduce the risk of lethal wildfires due to the emphasis on larger, widely spaced trees. Ignitions that occur within these conditions are more likely to stay on the ground, increasing the chances of keeping a wildfire small (Omi and Martinson 2002, Wagle and Eakle 1979). This is not the case, however, in the mixed2 and lethal fire regimes. By definition, lethal fires are consistent with the way these regimes operate.

Wildfires, regardless of whether they are characteristic or uncharacteristic, are undesirable in some cases, particularly in wildland/urban interface areas. Although wildfire risks can in part be addressed through the use of defensible space, in many situations watersheds are a more appropriate scale to deal with concerns about firefighter and public safety, as well as the multitude of infrastructures, resources, and values that are often associated with interface. Therefore, the juxtaposition and arrangement of vegetative conditions relative to wildland/urban interface issues were considered at the watershed or 5th field HU scale. This is important because in some cases desired vegetative conditions may contribute to hazard. In particular, the desired conditions for forested vegetation in MPC 5.2 are more hazardous than areas outside of this MPC due to the emphasis on vegetative attributes that promote timber production. Here the large tree desired condition is lower than in other MPCs to allow for a greater mix of all size classes over time. In addition, stand densities are greater to provide sufficient volumes for removal of timber products.

Alhough these conditions increase the hazard associated with lethal wildfires, the risk of these types of events may be reduced using a variety of vegetation management techniques. These techniques can include strategic placement of fuel breaks, surrounding vulnerable areas with vegetative conditions where fires can be more easily suppressed, or arranging treatments in a way that breaks up the continuity of more hazardous conditions (Fulé 2001, Omi and Martinson 2002, Deeming 1990, Finney 2001, Graham et al. 1999). These types of treatments, if strategically located, can be effective without being extensive. Because desired conditions are evaluated at the 5th field HU or watershed scale, treatments to mitigate hazardous conditions to ajacent areas should not prevent achievement of desired vegetative conditions.

Although the vegetative management techniques described above can reduce the risk of lethal wildfire, they address only one (vegetative conditions) of several factors and, therefore, cannot eliminate this risk (Figure A-3). The efforts made by property owners on their own behalf are an essential element in protecting homes in the wildland/urban interface.

Figure A-3. Factors That Contribute To Wildfire Risk
(Adopted from Bachman and Allgöwer 1999)



Shrublands

Desired conditions have been developed for various sagebrush communities (refer to Vegetation Classification portion of this Appendix for descriptions of sagebrush types). Shrublands occur on areas not classified as forestland and where shrub cover is has the potential to be greater than 10 percent shrub cover. Desired conditions are expressed as ranges for the amounts of acres found in the various condition classes (canopy cover classes) for sagebrush. The canopy covers refers only to the canopy cover of sagebrush, and does not include the associated species that may be found co-occurring with sagebrush. To reach the desired ranges, conditions would have to be within these ranges. Forest-wide direction states that we will evaluate the desired conditions at the 5th level HU watershed. All of the desired ranges are Forest-wide desired conditions, and each watershed is the analysis unit that will therefore, contribute to the Forest-wide condition. Although current conditions may prevent us from obtaining desired condition for quite some time, over a longer period management actions should result in non-forested vegetation that is approaching Forest-wide desired conditions, when all of the 5th field HUs are averaged together. The 5th HU is deemed an appropriate analysis unit for evaluating project level contributions, and also ensures a distribution of desired components across the Forest.

Tables A-12 presents the desired condition values for the mountain big sagebrush and basin big sagebrush communities. As an example, in a watershed with 12,000 acres of mountain big sagebrush, 3600-4800 acres would be in the 0-10 percent canopy cover class, 3,600-4,800 acres would be in the 11-20 percent canopy cover class, and 2,400-3,600 acres with a greater than 21 percent canopy cover, but with no more than 600 acres with a canopy cover greater than 31 percent. This would average upward with other watersheds to meet Forest-wide desired conditions.

Often, other shrub species will co-occur with sagebrush species or subspecies. Refer to the Vegetation Classification portion of this Appendix for description of the types. The presence of these other species also has ecological importance in terms of their function and contribution to processes. However, sagebrush species and subspecies in this case are being used as indicators of conditions. If we manage to desired conditions, the other associated shrub species will also respond as we represent of range of conditions on the landscape for sagebrush community types.

Table A-11. Desired Condition Ranges for Mountain Big Sagebrush and/or Basin Big Sagebrush

Mt. Big Sagebrush Canopy Cover Classes	Desired Amounts Of Canopy Cover Classes By Percent Of Area
0-10% canopy cover	30-40% of area
11-20% canopy cover	30-40% of area
21-30%, >31% canopy cover	20-30% of total area, with <= 5% in the >31% canopy cover class

As was recognized for the forested vegetation types, in some cases it may take many years to develop conditions that meet the desired conditions. If a watershed has recently experienced a large extent wildfire, it can be many years before the necessary structural complexity can develop at a landscape level. Conversely, a watershed with little disturbance over many years may all be in a dense canopy cover. Management actions that reduce the canopy covers would be an example of "trending toward" desired conditions, even if only applied on a small scale. When at desired conditions, maintenance would entail management actions that keep the balance of canopy cover classes within the range of desired conditions, or can provide for moving back into desired conditions. As some acres become denser through succession, other acres may be treated to limit overall canopy cover density. Another example is a watershed at desired conditions, but with the canopy cover over 21 percent at the high end of range (30 percent of acres). Although at desired, it may be necessary for management activities to reduce some of the higher canopy covers, to prevent conditions from exceeding those desired ranges and not having enough in the other canopy cover classes. Natural disturbances will certainly play a role also in the movement of acres in and out of canopy cover classes.

Riparian Vegetation

For riverine riparian vegetation, which includes coniferous potential vegetation, refer to Tables A-1 through A-9 (size class (outside MPC 5.2), canopy closure (outside of MPC 5.2), species composition, snags, and coarse woody debris) for the desired conditions. This includes the upland portions of coniferous vegetation found in the RCAs. This information is also related to information presented in Appendix B, Table 1.

Riparian vegetation is dominated by a variety of species, age classes, and structures including deciduous trees, willows, alders, sedges and hydric grasses, depending on stream substrate, gradient, elevation, soil-hydrologic, and disturbance processes. Riparian areas have their own disturbance processes that influence vegetative dynamics, with an almost continual readjustment in successional stages in many areas. Riparian vegetation is also influenced by processes in the uplands, as well as by those upstream in the watershed.

There is a high variability in site conditions relative to the factors discussed above, which will influence riparian vegetation desired conditions in any site-specific location. Therefore, site-specific desired condition determinations are needed.

Grasslands, Montane Shrubs, Wetlands/Marshes, And Other Vegetation Types

Other vegetation types not described in the above sections do exist on the Forest. Desired conditions need to be determined on a project basis based on local and available information. Most of these other types are described in the Vegetation Classification section. Other Forest-wide and Management Area Direction may apply to these types, such as limiting potential establishment and spread of noxious weeds. Some of these communities may also be important as habitats for rare plants.

Spatial Patterns

Recent advances in theory and empirical studies of vegetation and landscape ecology indicate that if goals of maintaining biological diversity across landscapes are to be achieved in the long term, then management needs to consider issues such as variability, scale, pattern, disturbance, and biotic processes. This is a daunting task that requires both a conceptual framework to organize and simplify ecosystem complexity and knowledge of the details of particular systems (Spies and Turner 1999). Elements of spatial pattern—including items such as the amount, proportion, size, interpatch distance, variation in patch size, and landscape connectivity—occur within vegetation types and between vegetation types. Landscape spatial patterns affect ecological processes and can be illustrated through differences in plants species composition and structure, as well as habitat utilization by wildlife. Despite recent interest and progress, it remains challenging to determine for various processes or organisms the conditions under which spatial heterogeneity is and is not important (Spies and Turner 1999). Forested ecosystems often include recognizable patchiness, usually corresponding to physical changes in topography, hydrology, substrate, or as a reflection of large disturbances (Bormann and Likens 1979, Whittaker 1956). Patchiness in the landscape itself can create changes in microclimate at patch edges, displaying demographic fluxes of a large number of individual plant species. This can result in varied plant species distribution and edge-oriented patterns (Matlack and Litvaitis 1999). These effects can subsequently result in changes to ecological processes and habitat utilization.

Within a subwatershed or watershed, there may be several forested vegetation types interspersed with several non-forested vegetation types. Additionally, there may be several MPC designations superimposed upon these vegetation types. It is important to consider the composition of the landscape that contains a project area. At the project level, opportunities exist to consider spatial patterns and how a project can affect the spatial patterns, and what those effects (positive or negative) will be to plant and animal species. During project design, considerations of spatial patterns are dependent upon what conditions are currently present and the overriding management concerns for the area. Generally, these conditions and concerns are site-specific, depending on the appropriate scale at which the project is operating. Repeating patterns of change emerge at landscape scales, and some order can be found through descriptions of successional pathways, patch mosaics, and seral stages that facilitate the understanding and management of vegetation at landscape scales. The challenge and art is to simplify without losing important attributes and to work with simplifications without losing sight of the underlying complexity (Spies and Turner 1999). Another useful way of understanding vegetation dynamics is to characterize it as a shifting mosaic of patches of different ages and developmental stages (Bormann and Likens 1979). The proportion of different age classes or seral stages across a landscape and over time is one of the fundamental characteristics of the vegetation mosaic.

Quantitative methods are available (McGarigal and Marks 1995, Baker and Cai 1992, Turner and Gardner 1991, Turner 1990, Turner 1989, O'Neill et al. 1988) to describe spatial patterns that relate patterns to ecological processes in order to monitor changes through time, to compare different vegetation types, and to evaluate the effects of alternative management options within a spatial context (Spies and Turner 1999). Diaz and Apostol (1992) provide a process for developing and implementing land management objectives

for landscape patterns, written specifically to help shape the landscapes created through National Forest land management activities. There is considerable variability in patterns among landscapes; the most productive approach is to make considerations on a case-by-case basis (Matlack and Litvaitis 1999). Subwatersheds may also possess very small amounts of a vegetation type. The majority of the vegetation type may be in an adjoining subwatershed, with only a small portion overlapping into the subwatershed of concern, or only small patches of a vegetation type may be found interspersed throughout. Consideration of whether or not meeting and sustaining a desired condition for such small amounts of vegetation will also depend upon the juxtaposition of these fragments to adjoining vegetation types or subwatersheds and the overriding management concerns of the area.

In some cases, the prevailing landscape pattern has been altered so strongly that determining appropriate landscape patterns may need to be based more on historical information. Historically, fire was an important disturbance that maintained the dynamics between native grass and big sagebrush dominance. Frequent small fires opened the shrub canopy and aided establishment of native perennial grasses at small scales, creating a mosaic of grass and shrub communities in different stages of development at large scales (Knick 1999). The dynamics of the system changed when cheatgrass invaded the sagebrush ecosystem, providing continuous fuels, compared to more patchily distributed native bunchgrasses. This facilitated fire spread and loss of shrubs, resulting in shrublands fragmented into smaller patches, thus increasing the boundaries and the spaces between patches. Ultimately, many patches did not persist (Knick and Rotenberry 1997). This is an example where patch and pattern have changed and so may no longer provide for the processes and habitat associated with these systems (Knick and Rotenberry 2000, Connelly et al. 2000, Paige and Ritter 1999, Knick and Rotenberry 1995, Rotenberry and Wiens 1980). Consideration of spatial patterns and subsequent management will be particularly difficult in these highly disrupted ecosystems and vegetation types.

Recommended management considerations to positively influence spatial patterns include:

- Maintaining or restoring the full range of age class and patch size distributions,
- Developing future goals for spatial patterns,
- Utilizing management strategies that that can create different levels of edge or interior patches,
- Considering spatial patterns within the prevailing physical template, and
- Considering important locations such as special soils, riparian areas, wetlands, cliffs, talus, caves, and others (Spies and Turner 1999).

VEGETATION MAPPING

Forested Vegetation Mapping

Forested vegetation is described using habitat types, which use potential climax vegetation as an indicator of environmental conditions. Individual habitat types are named according to the dominant climax overstory species in conjunction with the dominant understory species. At the level of the Forest Plan, forested habitat types have been further grouped into potential vegetation groups (PVGs) that share similar environmental characteristics, site productivity, and disturbance regimes. The purpose of these groupings is to simplify the description of vegetative conditions for use at the broad scale. For additional details on the specific habitat types and groupings into PVGs, see Mehl et al. (1998) and Steele et al. (1981).

Forested PVGs were mapped using a modeling process. The Forest was divided into groupings of 5th field HUs that shared similar larger scale environmental characteristics, such as climate and geology. Each one of these 5th field HU groups was modeled separately. Models were based primarily on slope, aspect, elevation and land type association groups. Other information was brought into developing modeling rules

within a 5th field HU group depending upon vegetation present in these groups and the availability of information. This additional information included forest inventory information, forest timber strata, cover type information, existing habitat type mapping, cold air drainage models and any other information that may have assisted with the development of modeling rules. Where necessary, some field verification did take place. Modeling rules were developed and processed in Arc Grid. Draft maps were sent to District personnel knowledgeable with the area for review, and refinements made as necessary.

Non-Forested Vegetation Mapping

Existing vegetation or cover type is a seral stage to a climax plant community, and generally results from some form of disturbance. The dominant overstory can vary with this successional change. Cover type classifications typically describe the current dominant vegetative cover or species occupying a site. Cover types can be used to describe seral stage species composition in relation to climax species composition or historical conditions. Existing non-forested vegetation groups or cover types may approximate the dominant climax vegetation, or in other situations, display variations from past use, management, and/or disturbance. This form of classification recognizes ecological influences that contribute to broad-scale cover type extent and future development. Unlike forested vegetation, shrubland and woodland successional change is not likely to be fully detected at the broad scale using only cover types. This is because the same overstory species may occur as part of several successional stages for the vegetative community. However, a cover type's density or canopy cover can be used as a complimentary indicator to define, in part, successional change, ecological condition, and disturbance regime influence. Similar to forest canopies, shrub or woodland overstories exert a competitive influence on herbaceous understory composition and productivity.

Cover types representing shrublands, grasslands, meadows, etc. were mapped as existing vegetation cover types using a remote sensing classification of LANDSAT developed at the University of Montana (Redmond et al. 1998) or in areas not covered by this project, with the Idaho/Western Wyoming Land Cover Classification developed by Utah State University (Edwards and Homer 1996). Riparian life forms were also determined from the Utah State University data. A more detailed classification of riparian types is not available at the broad-scale.

VEGETATION CLASSIFICATION

Forest Vegetation - Potential Vegetation Groups

PVG 1 - Dry Ponderosa Pine/Xeric Douglas-fir

This group represents the warm, dry extreme of the forested zone. Typically this group occurs at lower timberline down to 3,000 feet and up to 6,500 feet on steep, dry, south-facing slopes. Ponderosa pine is a dominant cover type that historically persisted due to frequent nonlethal fire. Under such conditions, open park-like stands of large, old ponderosa pine dominated the area, with occasional Douglas-fir, particularly at higher elevations. Understories are sparse and consist of low to moderately dense perennial grasses such as bluebunch wheatgrass and Idaho fescue. In some areas, shrubs such as mountain snowberry and bitterbrush dominate. This group is found scattered throughout the Payette National Forest. .

PVG 2 - Warm, Dry Douglas-fir/Moist Ponderosa Pine

This group represents warm, mild environments at low-to-middle elevations, but may extend upward to 6,500 feet on dry, southerly slopes. Ponderosa pine, particularly at lower elevations, or large ponderosa pine mixed with smaller size classes of Douglas-fir, are the dominant cover types in this group. Historically, frequent nonlethal fire maintained stands of large, park-like ponderosa pine. Douglas-fir

would occur on moister aspects, particularly at higher elevations. Understories are mostly graminoids such as pinegrass and elk sedge, with a cover of shrubs such as common snowberry, white spirea, and mallow ninebark. This group is found in many places on the Payette National Forest.

PVG 3 - Cool, Moist Douglas-fir

This group represents the cooler extremes in the Douglas-fir zone. The group can extend from 6,800 feet down to 4,800 feet following cold air. Adjacent sites are often subalpine fir. Some areas support grand fir. Ponderosa pine occurs as a major seral species only in the warmest extremes of the group. In cold air areas, particularly where cold air accumulates to form frost pockets, lodgepole pine may dominate. In some areas, Douglas-fir is the only species capable of occupying the site. The conifer cover types that historically dominated are a combination of several factors including fire frequency and intensity, elevation, and topography. Understories in this group are primarily shrub species including mountain maple, mountain ash, and blue huckleberry. Several other species, including scouler willow, thimbleberry, and chokecherry, may occur from disturbance, depending on its severity. Historical fire regimes were mixed (generally mixed1 where ponderosa pine occurs and mixed2 where other species dominate), creating a diversity of vegetative combinations. Very little of this PVG occurs on the Payette National Forest; what does occur is found in isolated cool-air drainages.

PVG 4 - Cool, Dry Douglas-fir

Douglas-fir is the only species that occurs throughout the entire range of the group. Lodgepole pine may be found in areas with cold air. Quaking aspen is also a common early seral species. Understories are sparse due to the cool, dry environment, and often support pinegrass and elk sedge. Understories of low shrubs, such as white spirea, common snowberry, Oregon grape, and mallow ninebark, occur in some areas that represent slightly different environments across the group. The historical fire regime was primarily mixed1-mixed2, depending on the fuels present at the time of ignition. Organic matter accumulates slowly in this group; so fire effects depend on the interval between fires, stand density and mortality, and other factors. This group may be found in minor amounts at higher elevations in the Douglas-fir zone in other parts of the Forest. In these cases, it is usually found above 6,000 feet on sites that are too cool to support ponderosa pine. Where it is common, it occurs at lower elevations in areas that are beyond the extent of ponderosa pine.

PVG 5 - Dry Grand Fir

The Dry Grand Fir Group is found throughout the distribution of grand fir. It ranges from 4,300 to 6,400 feet in elevation, often on drier upper slopes and ridges. Ponderosa pine and Douglas-fir are common cover types that appear to have been maintained by fire regimes that were historically nonlethal to mixed1. In many areas this group may have resembled PVG 1 and PVG 2, with open park-like stands of large ponderosa pine. Mixed species stands were likely restricted to small micro-sites that burned less frequently. Understories are similar to PVG 2 in that pinegrass, elk sedge, and white spirea are common.

PVG 6 - Moist Grand Fir

This group ranges in elevation from 3,400 to 6,500 feet and represents more moist environments in the grand fir zone. It often occurs adjacent to dry grand fir, and the two may intermix with each other, depending on topography. Ponderosa pine is common at the drier extremes of the group, and lodgepole pine occurs in colder areas. Western larch may also be present as an early seral species. Cover types of Douglas-fir and Engelmann spruce also occur in this group. Understories in this group are shrubby and include blue huckleberry, mountain maple, mountain ash, mallow ninebark, and occasionally pachistima. A conspicuous herb layer is also common, particularly following disturbance. Historical fire regimes were mixed, ranging from mixed1 to mixed2, in part due to the wide environment represented by this group. Where ponderosa pine was maintained as a common seral species, it appears that fires were more often

mixed1 because ponderosa pine produces a heavy seed that generally disperses only short distances. In other areas where western larch or Douglas-fir were maintained as common seral species, mixed2 fire may have been more common. Douglas-fir and larch produce lighter seed that can disperse much farther than ponderosa pine.

PVG 7 - Warm, Dry Subalpine Fir

This group is common on the Forest. It represents warmer, drier environments in the subalpine fir zone. Elevations range from 4,800 to 7,500 feet. At lower elevations, this group is found on steep, north-to-east aspects, but shifts to south-to-west aspects as elevation increases. Adjacent sites at lower elevations are Douglas-fir or grand fir, and these commonly intermix where topography controls cold air flow. Douglas-fir is the most common cover type throughout the group. Ponderosa pine may be found at the warmest extremes, particularly where this group grades into the Douglas-fir or grand fir zone. Lodgepole pine or Engelmann spruce may occur at cool, moist extremes, but these cover types rarely dominate. Understories are commonly shrubby and include mountain maple, mountain ash, serviceberry, and scouler willow. Historical fire regimes were generally mixed2, though mixed1 fires may have occurred where ponderosa pine was maintained.

PVG 8 - Warm, Moist Subalpine Fir

This group occurs mainly north of Cascade, primarily on the Payette National Forest and as a relatively minor PVG on the Boise National Forest. It becomes better represented on the Nez Perce National Forest. Elevations range from 5,000 to 7,200 feet but may follow cooler air down to 4,500 feet. This group occurs on moist, protected areas such as stream terraces, toe slopes, and steep, northerly aspects. Cover types include lodgepole pine, western larch, Douglas-fir, and Engelmann spruce. The presence of these and combinations depend on site conditions and past disturbances. Dense shrubs are common in the understory and include Sitka alder, menziesia, blue huckleberry, Utah honeysuckle, mountain maple, mountain ash, and serviceberry. Historical fire in this group was more commonly lethal, though underburns may have occurred occasionally. Ignitions likely occurred in adjacent areas due to the location of this group. Whether these areas burned or not may have depended on weather prior to and at the time of the ignition.

PVG 9 - Hydric Subalpine Fir

Seasonally high water tables control this group, and the extent may be small in some areas depending on the presence of these conditions. Elevations range from 9,000 to as low as 4,500 feet in frost pockets and along cold air drainages. This group most commonly occurs on wet toe slopes, stream terraces, seep areas, and old bogs. Cover types are lodgepole pine, followed by Engelmann spruce and subalpine fir. Early seral conditions usually support lodgepole pine because this species can tolerate intermittent high water tables and cold air that often accumulates. In severe frost-prone areas, lodgepole pine can persist for long periods. In other areas with better cold air drainage, Engelmann spruce and subalpine fir rapidly establish under the lodgepole pine. Understories in this group are primarily dominated by herbs and grasses that require the seasonal influence of a high water table. Shrubs are sparse, though Labrador tea can dominate some sites. Historically, fire was lethal in this group. Like PVG 8, ignitions more likely occurred on adjacent drier slopes, and burning in this group likely depended on weather conditions before and at the time of the ignition.

PVG 10 - Persistent Lodgepole Pine

This group is common throughout the subalpine fir zone. It represents cold, dry subalpine fir sites that range in elevation from over 9,200 down to 5,200 feet in frost-pockets. Lodgepole pine is the dominant cover type, though small amounts of other species may occasionally occur. Understories can be sparse. Generally, grasses and scattered forbs are the most common understory components. Shrubs are sparse and consist mainly of low-growing huckleberries, including dwarf huckleberry and grouse whortleberry.

Historically, this group experienced lethal fire, though nonlethal fires may have occurred during stand development. Lodgepole pine is more often non-serotinous in western portions of the Forest and appears to become more serotinous moving easterly. Within the Forest, lodgepole pine may reproduce in areas that experience nonlethal fires. The result is more vertical stand diversity in some areas than is often found where lodgepole pine is mostly serotinous. Over time, the combinations of these low-intensity events, subsequent reproduction, and mountain pine beetle mortality would have created fuel conditions that allowed lethal fires to occur under the right weather conditions.

PVG 11 - High Elevation Subalpine Fir (with whitebark pine)

This group occurs at the highest elevations of the subalpine fir zone and generally represents the upper timberline conditions. It often grades into krummholz or alpine communities. Whitebark pine is a major seral species in this group. Engelmann spruce and subalpine fir are the climax co-dominates. In some areas, whitebark pine serves as a cover for Engelmann spruce-subalpine fir establishment. Understories are primarily forbs and grasses tolerant of freezing temperatures that can occur any time during the growing season. Shrubs are sparse due to the cold, harsh conditions. Historically, the fire regime in this group is characterized as mixed2, though the effects of fires were highly variable. Ignitions are common due to the high elevation, however fuel conditions were historically sparse due to the cold growing conditions and shallow soils. Therefore, fire effects were patchy. Fire regimes are mixed2 with whitebark pine being a major seral component.

Old Forest

"Old forest" is a component of the large tree size class, whereas "old growth" is typically described as a set of characteristics associated with the late successional stage of forested vegetation groups or types. Based on recent research encompassing the central Idaho batholith, old growth late successional stage characteristics were important, but not extensive on the historic landscape (Morgan and Parsons, 2001). However, the large tree component was common (Morgan and Parsons, 2001; Wisdom et al. 2000). Table A-12 (Morgan and Parsons 2001) shows the estimated percent of forested landscapes in the central Idaho batholith that were historically occupied by stands in the large tree size class (medium tree size class for PVG 10, persistent lodgepole pine), and by stands with late successional old growth characteristics. Estimates were developed for each of the 11 potential vegetation groups on the Ecogroup.

The main reason for the large differences between Large Tree percent and Old Growth percent is that vegetation structural conditions in central Idaho developed in conjunction with disturbance processes (fire, insect, disease, wind, etc.) and climate variations. Conversely, late successional old growth characteristics develop in the absence of frequent disturbances (Hamilton et al. 1993). In central Idaho, disturbance is a common occurrence. Historically, forested stands in lower-elevations vegetation groups likely developed large trees and relatively open canopies during mid-successional stages, and these conditions were maintained over time by frequent low-intensity fire disturbance. Dense stands and decadence typically associated with late successional stage conditions (old growth) rarely, if ever, occurred. Thus, historical stands dominated by large and old seral trees like ponderosa pine could be considered old forest, but not as "old growth" under any definition that incorporates a full set of late successional conditions.

Table A-12. Historic Levels Of Central Idaho Stands Occupied By Large Tree Size Classes And Stands With Late Successional Old Growth Characteristics
(From Morgan and Parsons, 2001)

	PVG 1	PVG 2	PVG 3	PVG 4	PVG 5	PVG 6	PVG 7	PVG 8	PVG 9	PVG 10	PVG 11
Percentage of PVG historically in the large tree size class (mean value)	91	80	41	34	84	56	21	21	37	19	27
Percentage of PVG estimated to represent old-growth	0	0	8.5	8.4	0.4	2.5	4	5.5	26	0	1.2

Note: Large tree size class refers to stands where the overstory trees average 20 inches diameter or greater. Medium tree size class refers to stands where the overstory trees average between 12 and 19.9 inches diameter.

The threshold to meet viability for large-tree-dependent terrestrial species has been determined to be 20 percent of the forest stands classified as being in the large tree size class. The 20 percent threshold has been adopted based on several references concerning viability and biodiversity needs for goshawk and other forest-dependent wildlife species that require one or more components of the large tree size class (Fahrig 1997, Graham et al. 1997, Graham et al. 1999, Graham and Jain 1998, Reynolds et al. 1992, Wisdom et al. 2000). This threshold has been incorporated into the desired conditions for forested vegetation PVGs found in this appendix, and into Forest Plan management direction (Wildlife Resources) through the following standard:

> Maintain at least 20 percent of the acres within each forested PVG found in a watershed (5th field HU) in large tree size class (medium tree size class for PVG 10, persistent lodgepole pine). Where analysis of available datasets indicates that the large tree size class (medium tree size class in PVG 10) for a potential vegetation group in a watershed (5th field HU), is less than 20 percent of the total PVG acres, management actions shall not decrease the current area occupied by the large tree size class, except when:
>
> > a) Fine or site/project scale analysis indicates the quality or quantity of large tree size class for a PVG within the 5th field HU would not contribute to habitat distribution or connective corridors for TEPCS and MIS species in short or long-term, <u>and</u>
> >
> > b) Management actions that cause a reduction in the area occupied by the large tree size class would not degrade or retard attainment of desired vegetation conditions in the short or long-term as described in Appendix A, including snags and coarse woody debris.

Other Forested/Woodland Vegetation Types

<u>Aspen</u>

Aspen covers a broad environmental range across the Intermountain Region (Mueggler and Campbell 1982). It grows at elevations as low as 5,000 and as high as 11,000 feet. Aspen occurs both as a seral and climax tree species within its range (Mueggler 1985). Where it is seral, it is an early seral stage of forested PVGs. Throughout these areas, individual stands are relatively small, seldom exceeding 5 acres (Mueggler 1985). Where aspen is seral, it is maintained on the landscape by disturbance. Historically, fire is

considered a primary disturbance agent (Jones and DeByle 1985). Fires result in single-aged stands that develop from root suckering. Fire frequencies vary greatly and severities range from low to high. Aspen does not burn readily. However, all but the lowest severity fires kill aspen because of its thin, uninsulated bark. Therefore, most fire effects in aspen are lethal.

Grassland And Shrubland Vegetation

Grassland Cover Types

Perennial Grass Slopes - This cover type connects with the dry forested cover types, mountain big sagebrush, and bitterbrush groups, and is more prevalent in the north and northwestern foothills and canyonlands of the Ecogroup. It usually occurs between the 10-to-18 inch precipitation zone, on southern and western aspects. The group is predominantly made up of bluebunch wheatgrass. Perennial grasses are dominant on the sites, composing 80 to 90 percent of production. Sandberg bluegrass is a lesser but constant associate. The forb component contains a large number of species, few of which are common throughout. The most common forbs are Indian wheat, shining chickweed, salsify, yarrow, lupine, balsamroot, biscuit root, hawksbeard, fleabane, milkvetch, and phlox. Ground cover is typically greater than 65 percent. This vegetation group can be susceptible to damage under very hot and dry conditions. Stand recovery is very difficult and slow in the Idaho Batholith. Historic fire intervals are frequent (20 years), with typically a mixed1 to mixed2 fire regime, depending upon the amount of Idaho fescue present. This group is highly susceptible to several invaders including annual bromes, rush skeletonweed, yellow starthistle, several knapweeds, dyer's woad, and Dalmatian toadflax.

Perennial Grass Montane - This cover type connects with numerous forested cover types, mountain big sagebrush and bitterbrush groups, and bluebunch communities. It is very highly rated, in terms of ecotone diversity. It usually occurs between the 18-to-30 inch precipitation zone on southern aspects, and 14 to 30 inches on northern aspects. Ground cover is usually greater than 80 percent. Idaho fescue is the predominant grass in this group. Other grass species that occur are slender wheatgrass, sedges, intermediate oatgrass, western needlegrass, and Richardson needlegrass. Forbs compose 40 to 65 percent of overall production. Common forbs are yarrow, bessaya, geum, Indian paintbrush, lupines, phlox, and balsamroot. Historic fire intervals are frequent (20 years) in typically nonlethal to mixed1 regimes. Certain species within the community are susceptible to fire damage under very hot and dry conditions, but recovery occurs in a few years. Trampling damage is minimal to nonexistent and primarily occurs at the higher elevations. Bluegrass is a common invader. This group is highly susceptible to several invaders including annual bromes, rush skeletonweed, yellow starthistle, several knapweeds, dyer's woad, and Dalmatian toadflax.

Shrubland Cover Types

Mountain Big Sagebrush - This cover type connects with the greatest number of other forest, non-forest, and riparian cover types. This type consists of large blocks with a wide range of distribution. This group occurs in the 14-to-18+ inch precipitation zone, on well-drained sites and on soils with a high content of rock or gravel. Structural stage ranges are typically balanced, with high ground cover and few cryptogams. Fire intervals can be frequent, ranging from 20-60 years, with a mixed2 fire regime. Historic vegetation disturbances were related to ungulate grazing of southern exposures, due to less snow and early green-up. Understory forb and grass species can be variable and diverse. Bitterbrush, grey horsebrush, and green rabbitbrush are frequently present. Snowberry is present on moister sites.

Montane Shrub - This cover type is usually interspersed as stringers and patches within the mountain big sagebrush, aspen, and conifer cover types. Its patchiness is strongly related to mesic soils with high water-holding capacity and/or northerly exposures. Typically this group has multiple vegetation layers that are dominated by sprouting species. Species include chokecherry, snowberry, serviceberry, and wild rose.

Several other browse species may occur. This group usually has a rich and diverse herbaceous component. These conditions provide extremely diverse wildlife habitats and an important watershed group. Fire intervals are typically 20 to 40 years, with a mixed2 fire regime. Ungulate and grazing disturbance are not uncommon components. Insect and disease may be common, with occasional outbreaks.

Bitterbrush - This type is usually associated with southern to western exposures. Soils tend to be shallow (10 to 20 inches), with stony or rocky loams tending towards sandy textures. Typically bitterbrush occurs in small patches interspersed with the lower ecological thresholds of ponderosa pine and with all the sagebrush types except Wyoming Big Sagebrush. Older stands have a variety of age classes, while younger stands are typically homogeneous in age. In some sites sagebrush may appear as a co-dominant. Fire intervals are seldom, usually greater than 40 years, with a mixed1 fire regime. This group is highly susceptible to cheatgrass and diffuse knapweed invasion. Common understory species are bluebunch wheatgrass, Sandberg bluegrass, junegrass, needle and thread, and Idaho fescue. Perennial grasses make up the largest portion of the composition. Common forbs include yarrow, lomatium, lupine, arrowleaf balsamroot, and milkvetch.

Riparian Vegetation

There are no comprehensive riparian classifications or vegetative community descriptions for the Ecogroup. Hall and Hansen (1997) have developed a riparian habitat type classification for Bureau of Land Management Districts in Southern and Eastern Idaho that includes portions of the South Hills on the Sawtooth. Riparian community type classifications have been developed by Youngblood et al. (1985) for eastern Idaho-western Wyoming, and by Padgett et al. (1989) for Utah and Southeastern Idaho. Due to the lack of comprehensive classification information for our area, the Forest Plan Revision Team chose to use the Utah LANDSAT cover types to describe these communities.

Riverine Riparian

This cover type consists of vegetative communities dominated by conifer species and shrubs. The primary conifers are subalpine fir, Engelmann spruce, limber pine, and Douglas-fir, with some aspen. Other trees and shrubs include Rocky Mountain maple, serviceberry, chokecherry, thinleaf alder, currants, and willows. These communities generally occur on steep slopes and occupy edges of riparian zones with A and B stream channel types. Padgett et al. (1989) and Youngblood et al. (1985) stated that these community types in their areas likely represent successional stages within described forested communities. For this reason, Padgett et al. recommended consulting available forest habitat type classifications for additional information.

Deciduous Tree

This cover type consists of a dominant overstory of black or narrowleaf cottonwood. Associated tree species include thinleaf alder, Rocky Mountain maple, water birch, and aspen. Primary shrub species include chokecherry and willows. Location is generally below 5,500 feet along stream channels in lower canyons. This cover type usually requires a moist and coarse substrate.

Shrub Riparian

This cover type is dominated by willow species. Primary associated tree and shrub species include cottonwoods, swamp birch, thinleaf alder, Rocky Mountain maple, shrubby cinquefoil, and chokecherry. Grasses and forbs include sedges, tufted hairgrass, Geranium, louseworts, and American bistort. This type is found in mid to upper elevations in broad wet meadows and alluvial terraces on relatively low gradients (1 to 3 percent).

Herbaceous Riparian
This cover type is typically found in mountain meadows where soil moisture is abundant throughout the growing season. Principle species include sedges, woodrush, reedgrass, pinegrass, timothy, bluegrass, tufted hairgrass, saxifrage, and fireweed. This type has a wide range of occurrence, typically found in broad flat meadows.

Other Vegetation

Wetlands
Wetlands are those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, wet meadows, seeps, and similar areas. These lands are transitional between terrestrial and aquatic systems. Vegetative species found in wetlands are heavily influenced by local site conditions.

Marshes - This cover type is permanently or semi-permanently flooded and dominated by hydric species located adjacent to small streams, beaver ponds, lakes, and meadows. Sedges are the most common species. This type usually occurs around the 7,000-foot elevation level. Sites are dominated or co-dominated by bulrushes, cattails, woodrushes, or sedges.

Bogs, Fens, and Peatlands – These are wetlands that typically have sub-irrigated cold waters sources. Peatlands are generally defined as wetlands with waterlogged substrates and at least 30 centimeters of peat accumulation (Moseley et al. 1994). The vegetation is often dense and dominated with low-growing perennial herbs (Skinner and Pavlick 1994).

Wet Meadows and Seeps – These are wet openings that contain grasses, sedges, rushes and herbaceous forbs that thrive under saturated moist conditions. These habitats can occur on a variety of substrates and may be surrounded by grasslands, forests, woodlands, or shrublands (Skinner and Pavlick 1994).

Alpine
Alpine habitats are defined as the area above treeline in high mountains. Rocky or gravelly terrain is generally prevalent. Grasses and sedges often form thick sod-like mats in meadows. Most alpine plant species have unique adaptations to survive the harsh conditions of this habitat (Billings 1974). Many plants grow in mats or cushions. Perennials predominate in the alpine floras, as the growing season is often too short for annuals to complete their life cycles (Strickler 1990).

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Appendix 7
Legacy Tree Guide

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Legacy Tree Guide Payette National Forest

Perry and Amaranthus (1997) defined forest legacies as “anything handed down from a pre-disturbance ecosystem.” In simplest terms, legacy trees are those that survived the previous stand-initiating disturbance event in lethal fire regimes, or survived numerous low- to moderate-intensity disturbance events in the other fire regimes.

Legacy trees tend to emerge above younger trees in some homogenous stand conditions, but this can be variable depending on the topography and the time elapsed since the last disturbance event.

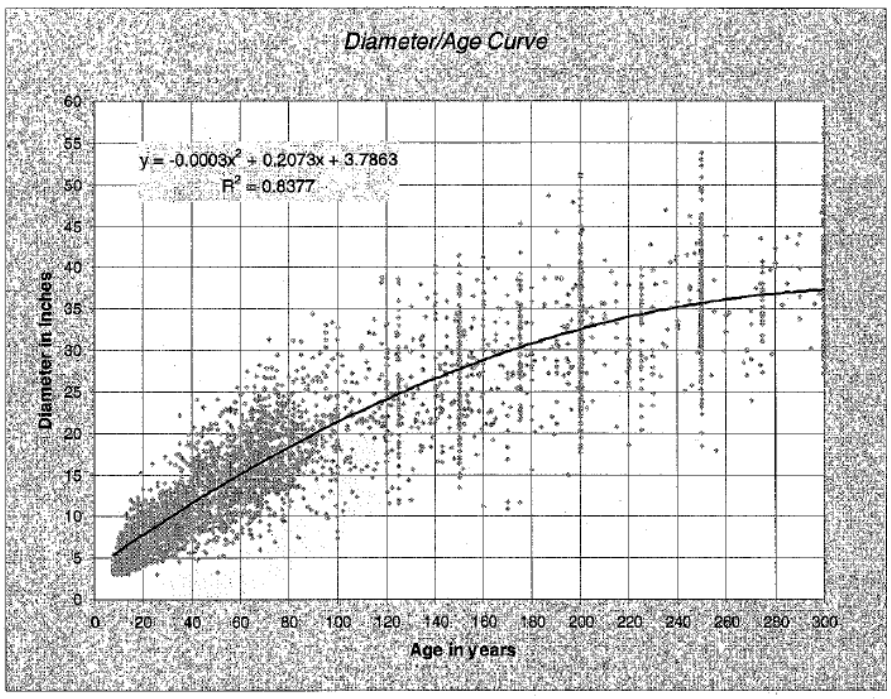
The remainder of this document outlines a process for identifying legacy ponderosa pine, western larch, and Douglas-fir for the Middle Fork Weiser River project on the Payette National Forest. For the purposes of this exercise, it was assumed that all legacy trees should exceed 150 years of age. Based on sampling within the project area, most trees that meet the criteria for legacy trees in this guide are at least 150 years old. This is a good indicator that the guide does identify trees that were resilient enough to survive previous disturbance events.

The basis for this guide is *Identifying Old Trees and Forests in Eastern Washington* (Van Pelt 2008). Modifications have been made based on professional judgment, inventory data on the Payette National Forest (USDA 2004), and sampling conducted in the Middle Fork Weiser River project area to provide a simple process to identify legacy trees. As with all field guides, the scoring system provided in this document will not address every situation, and application of both professional judgment and common sense will be necessary and is encouraged.

The intent of this guide is to aid in identification of trees that are greater than approximately 150-200 years in age and have survived previous disturbance events.

It is well documented that diameter is a poor indicator of the age of individual trees (Van Pelt 2008, Johnston 2014). Payette National Inventory data (USDA Forest Service 2004) also appear to support this conclusion. Figure 1on the following page (from the Payette National Forest inventory data (USDA Forest Service 2004) indicates that the average diameter at breast height (DBH) of a 150-year-old tree is approximately 27 inches but could range from approximately 13 to 42 inches DBH while the average DBH of a 200-year-old tree is approximately 33 inches but could range from 17 to 52 inches DBH. The table also indicates that it is rare for trees greater than 40 inches DBH to be less than 150 years in age and for trees greater than 50 inches DBH to be less than 200 years old.

Based on this information the indicators described in the species sections below will be used to identify legacy trees in the Middle Fork Weiser River Landscape Restoration Project:



This graph displays the average progression of diameter as trees age. It is not specific to any particular species, as it includes all species from all strata and all working groups.

Data source: individual tree measurements from the 1979, 1991, and 2001 forest inventories. Also included is data from permanent growth plots for young trees. No cull or suppressed trees are included; only trees designated as live, crop, or site trees in the database were used for this graph. Age groupings are apparent around 150, 175, 200, and 250 years because stand exams rarely require exact age measurements beyond a certain age (often around 120-150), and are therefore estimated to the nearest 25 or 50 years.

Figure 1. Average progression of diameter as trees age

Ponderosa Pine

Legacy ponderosa pine tend to have little terminal leader growth, the top of the crown is generally flattened as the lateral branches reach the same height as the terminal, branches throughout the bole become larger in diameter, and lower branches tend to droop. Huckaby et al. (2003) noted that the majority of trees with large fire scarred cat-faces are legacies since most trees established more recently have not been subjected to the same fire regimes as occurred historically.

As with many tree species with wide distributions and ecological amplitudes, age and size of ponderosa pine are not closely correlated (Van Pelt 2008, pg. 75). Because ponderosa pine can grow in vegetation zones ranging from rocky cliffs to riparian zones, the size of the tree reveals little about its age (Van Pelt 2008, pg. 75). However, the color and condition of the bark, knot indicators on the main trunk of the tree, and the overall form of the tree's crown do provide an indication of the tree's age.

Unlike trunk diameter, maximum plate width of the bark is well correlated with tree age (Van Pelt 2008, pg. 79). As the tree ages, the outermost bark continues to flake off, causing the colorful plates of outer bark to get wider, while the width of the dark fissures in between those plates remain relatively constant (Van Pelt 2008, pg. 78). Bark plates substantially

wider than the fissures is an indication of old age (Figure 2 and Figure 3; Van Pelt 2008, p. 79).

Figure 2. Bark patterns on mature ponderosa pine. Note residual charcoal in the center photo (Van Pelt 2008, pg. 79).

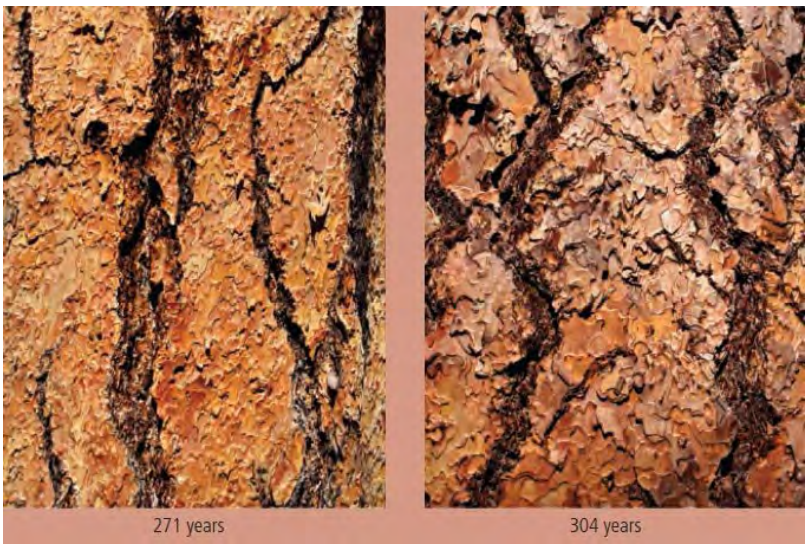


Figure 3. Bark patterns on old ponderosa pine. The colorful bark plates are generally more than three times wider than the darker fissures that separate them (Van Pelt 2008, pg. 79).

Ponderosa pine growth is whorl-based, like many members of the pine family (Van Pelt 2008, pg. 80). This pattern repeats every year so that over time the tree will consist of a series of branch whorls separated by short sections of trunk (Figure 4) (Van Pelt 2008, pg. 80). Over time, branches in the lower crown die due to shading and the lower crown lifts as the tree grows taller (Figure 5) (Van Pelt 2008, pg. 80).

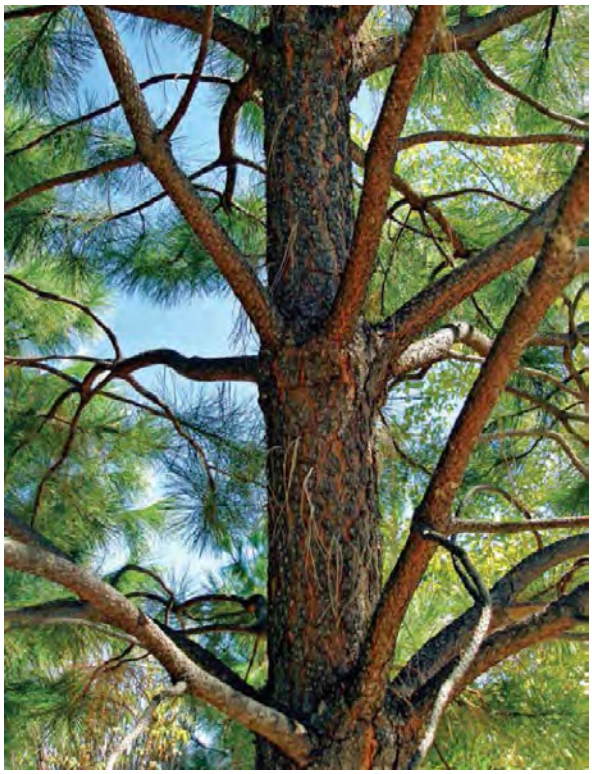


Figure 4. Whorl-based branch growth on a young ponderosa pine (Van Pelt 2008, pg. 81).

Figure 5. The whorl-based branch growth is clearly visible below the receding crown of this ponderosa pine (Van Pelt 2008, pg. 82).

Dead branches are usually present in the lower crowns of 100-year-old trees, but eventually fall off, leaving tell-tale signs of where the branches once were (Figure 6) (Van Pelt 2008, p. 80 and 81). As the tree grows, the bark begins to cover up the locations of these former branches. However, residual evidence may be visible on trees older than 200 years (Figure 7;

Van Pelt 2008, p. 81). Only in old age are the scars of original branches completely covered (Figure 8) (Van Pelt 2008, p. 81).

Figure 6. Old branch whorls are still visible decades after the branches have fallen off (Van Pelt 2008, pg. 83).

Figure 7. A century may pass before bark growth completely obscures old branch locations (Van Pelt 2008, pg. 84).

Figure 8. The rough and deeply furrowed bark of old trees shows no indication of where the original branches were located when the tree was younger (Van Pelt 2008, pg. 85).

The appearance of a tree of a given age is affected by a number of factors, including site productivity and overall tree vigor. In general, differences become accentuated with age (Van Pelt 2008, p. 83). To aid in their identification, a series of crown profiles of trees has been prepared representing trees of different ages and degrees of vigor (Figure 9; Van Pelt 2008, pp. 83 and 84).

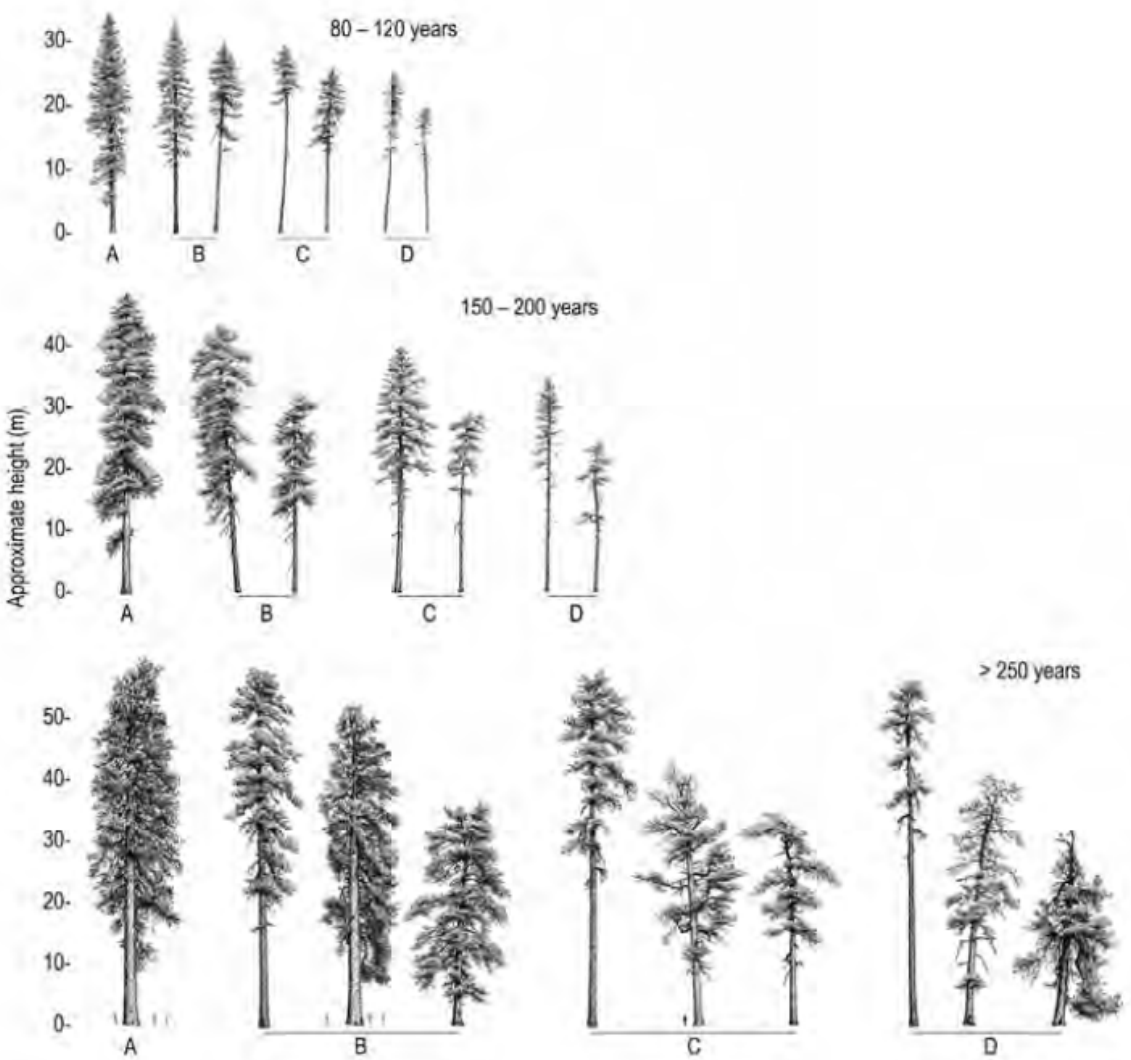


Figure 9. Ponderosa pine crown form and tree vigor on the Payette National Forest

Figure 9represents three age and four vigor classes (A-high vigor to D-low vigor). Vigor is a function of site productivity and response to disturbance and environmental stress. More than one individual is shown for vigor classes B through D to illustrate possible variations. Competition-based mortality usually ensures that most trees in vigor classes C and D do not survive to the next age class.

Table 1. Rating System for Determining Ponderosa Pine Legacy Trees

Lower Trunk Bark Condition[a]	Score
Dark Bark with Small Fissures	0
Outmost Bark Ridge Flakes Reddish, Fissures Small	1
Colorful Plates, Width About Equal to Fissure Widths	2
Maximum Fissure to Fissure Plate Width ≥6 inches and <10 inches	3
Maximum Fissure to Fissure Plate Width ≥10 inches	5
Knot Indicators on Main Trunk Below Crown	**Score**
Dead Branches Below Main Crown, Whorl Indicators Extending Nearly to Tree Base	0
Old Knot/Whorl Indicators Visible Below Main Crown	1
No Knot/Whorl Indicators Visible	3
Crown Form (Refer to Figure 8)	**Score**
Similar to a Tree in Top Row	0
Similar to a Tree in Middle Row	3
Similar to a Tree in Bottom Row	5
Scoring Key[b]	
<2	Young Tree
2–5	Mature Tree
≥6	Legacy Tree

[a]Determine bark conditions on the uphill side of tree near DBH.
[b]Choose one score from each category and sum scores to determine developmental stage.

Western Larch

In some ways, western larch fills the niche occupied by ponderosa pine in environments too cold for the pine to tolerate (Van Pelt 2008, p. 99). Old, but slender trees can be found rising above canopies of Engelmann spruce and subalpine fir at the upper elevations. Elsewhere, and under more favorable conditions, the larch can dominate forest stands with subordinate mixtures of grand fir, lodgepole pine, and Douglas-fir (Van Pelt 2008, pp. 99 and 101).

Like ponderosa pine, western larch develops very thick bark with age. Mature trees often have the rugged, grayish-brown bark of a Douglas-fir (Figure 10; Van Pelt 2008, p. 101). Old trees, greater than 250 years, often develop the richly colored bark of a ponderosa pine (Figure 11) (Van Pelt 2008, p. 101). However, the bark transformation from young to mature to old is not as consistent, nor as predictable, as that of ponderosa pine (Van Pelt 2008, p.101). Ultimately, bark characteristics must be used with other characteristics to determine approximate tree age (Van Pelt 2008, p. 103).

Figure 10. Mature western larch (left) will often have bark that is difficult to distinguish from Douglas-fir (right) (Van Pelt 2008, pg. 102).

Figure 11. The bark of very old western larches (left) is often a mimic for ponderosa pine bark (right) (Van Pelt 2008, p. 102)

While larch branches do not grow in a whorl-based manner, young trees still develop tiers of original branches. As the stand develops, lower branches are shed as they become shaded (Van Pelt 2008, p. 106). Depending on the stand's density, the crown base often will recede at a rate comparable to the height growth of the stand (Van Pelt 2008, p. 106). Similar to ponderosa pine, as the tree grows, bark begins to cover up the locations of these former branches.

As the maturing stand thins, light is able to penetrate below the living crown (Van Pelt 2008, p. 106). Larches often respond by producing epicormic branches below the base of the live crown (Van Pelt 2008, pg. 106).

Epicormic branches, which start from the cambium and not from terminal buds, often occur at the axils of branches and twigs, the sites of old branch wounds, or other locations where the bark is thin (Figure 12; Van Pelt 2008, p. 106). The crowns of mature western larch are often a combination of original and epicormic branches, a pattern that becomes accentuated as trees age (Van Pelt 2008, p. 106). Because epicormic branches form on the outside of the trunk, they can grow in any direction, even tangential to the trunk. Original branches, in contrast, always form perpendicular (radially oriented) to the trunk. If many epicormic branches start from a common locus, a fan-shaped system of branches will result (Figure 13; Van Pelt 2008, p. 108).

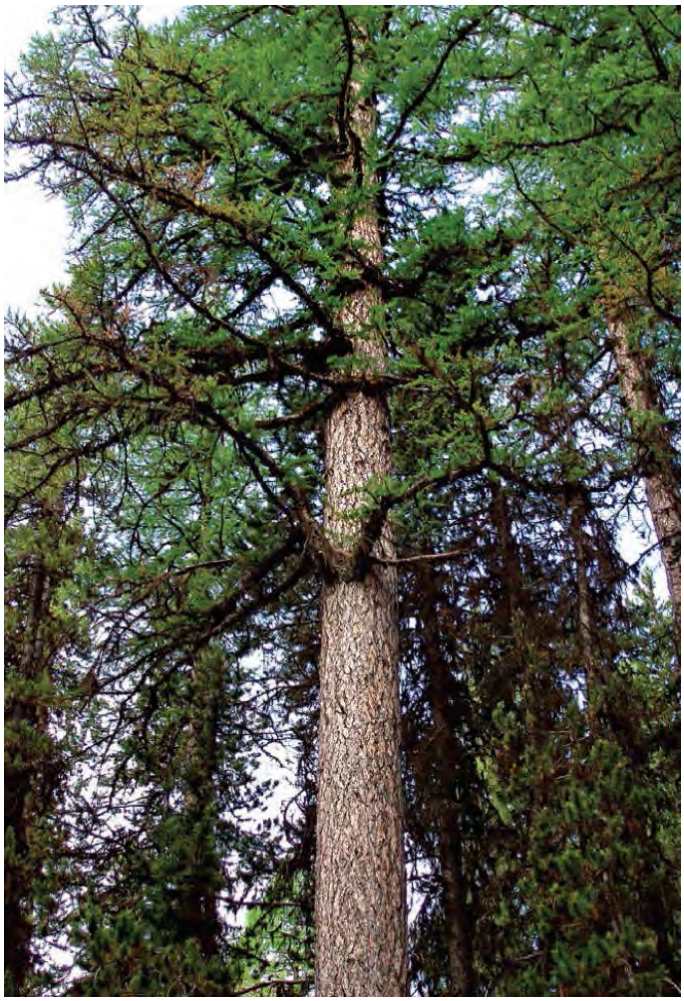


Figure 12. Epicormic branches developing below the main crown in a maturing western larch (Van Pelt 2008, p. 105).

Figure 13. Mature western larch. The graceful crown consists of original branches and an unmistakable radiating fan of epicormic branches adorning the base of the crown (Van Pelt 2008, p. 106).

Crown complexity, arising from damage due to prolonged mistletoe infections or physical events, can assist in determining tree age (Figure 14; Van Pelt 2008, p. 109). In a manner similar to the production of epicormic branches, larches have the ability to produce reiterated trunks following crown damage (Figure 15) (Van Pelt 2008, p. 109). A series of profiles have been prepared to illustrate the crown structures that can occur in western larch during its lifetime, including the variations imposed by site productivity and elevation (Figure 16).

Figure 14. **Large limbs with mature bark are a sign of an old tree. In this case, the twisted shape resulted from an old mistletoe infection (Van Pelt 2008, pg. 109).**

Figure 15**. Reiterated trunk formation in western larches. Old trees can recover from crown damage by producing secondary trunks, as illustrated here (Van Pelt 2008, pg. 110).**

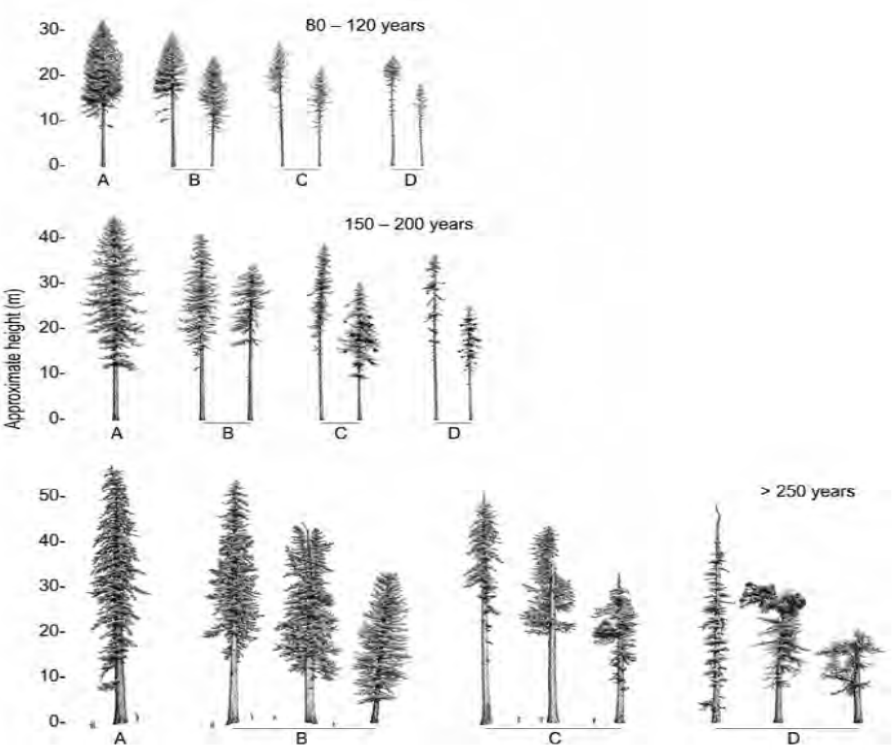


Figure 16. Western larch crown form and tree vigor on the Payette National Forest.

Figure 16 shows idealized forms representing three age and four vigor classes (A-high vigor to D-low vigor). Vigor is a function of site productivity and response to disturbance and environmental stress. More than one individual is shown for vigor classes B through D to illustrate possible variations. Competition-based mortality usually ensures that most trees in vigor classes C and D do not survive to the next age class.

Table 2. Rating System for Determining Western Larch Legacy Trees

Lower Trunk Bark Condition[a]	Score
Hard, Bony Bark with Small Fissures	0
Hard Bark with Moderately Deep Fissures (2 to 4 inches)	1
Deep Fissures Present (>4 inches)	3
Maximum Fissure to Fissure Plate Width ≥6 inches	3
Knot Indicators on Lower One-third of Tree	**Score**
Branch Stubs Present	0
Old Knot/Whorl Indicators Visible	1
No Knot/Whorl Indicators Visible	2
Lower Crown Indicators	**Score**
No Epicormic Branches	0
Small Epicormic Branches Present	1
Large and/or Gnarly Epicormic Branches Present	2
Crown Form (Refer to Figure 15)	**Score**
Similar to a Tree in Top Row	0
Similar to a Tree in Middle Row	3
Similar to a Tree in Bottom Row	5
Scoring Key[b]	
<3	Young Tree
3–6	Mature Tree
≥7	Legacy Tree

[a]Determine bark conditions on the uphill side of tree near DBH.
[b]Choose one score from each category and sum scores to determine developmental stage.

Douglas-fir

This species shares many features with ponderosa pine and western larch; namely, Douglas-fir have very thick bark at maturity and the ability to withstand moderate- to high-intensity fires (Van Pelt 2008, p. 121). Old Douglas-firs are very fire-resistant due largely to the protective bark that develops with age (Van Pelt 2008, p. 123). In contrast, the thin bark of young trees offers little protection, even with low-intensity fires (Van Pelt 2008, p. 123). The thin bark begins to thicken and develop vertical fissures as trees mature (Van Pelt 2008, p. 123). For the first 100 to 200 years, the bark is hard and bony, and usually brown to gray (Figure 17 and Figure 18; Van Pelt 2008, p. 123).

Douglas-fir growth is whorl-based, like that of ponderosa pine (Van Pelt 2008, pg. 124). In Douglas-fir, the lower crown begins to recede once a stand has achieved canopy closure (Van Pelt 2008, pg. 124). The lower branches die when they become too heavily shaded. Once dead, they often rot at their base and drop off the tree, leaving just a small scar in the otherwise unblemished bark (Figure 19; Van Pelt 2008, p. 124).

Figure 17. The hard, bony bark of mature trees. Depending on environmental conditions, Douglas-fir bark is either brown or gray. In this case the gray is caused by lichens (Van Pelt 2008, p. 123).

Figure 18. Hard, but thick bark is common on old Douglas-fir in the drier parts of its range (Van Pelt 2008, p. 125).

Figure 19. Branch scars on a mature Douglas-fir. The locations of original branches that have since died and fallen off are still evident. One original live branch and some epicormic branches are still visible in this photograph (Van Pelt 2008, p. 126).

Ultimately, branch scars are hidden by the continually expanding trunk after a period of several decades to more than a century (Van Pelt 2008, p. 124). During that interval, the bark will be thinner at these spots than in the surrounding areas (Van Pelt 2008, p. 125). If changes in the surrounding forest occur, such as the opening up of the canopy or the death of a neighboring tree, epicormic branches begin to form at some of these old wounds (Van Pelt 2008, p. 125). Old Douglas-fir trees often have an upper crown of original branches and a lower crown composed of the dead remnants of original branches surrounded by younger epicormic branches and fan-shaped epicormic systems (Figure 20;Van Pelt 2008, p. 125).

Figure 20. Epicormic branches. A fan of epicormic branches (visible at the base of the Douglas-fir crown) often indicates a tree in late maturity (Van Pelt 2008, p. 126).

Crown profiles of Douglas-fir at three age classes and four vigor classes (A-D) are presented in (Figure 21) (Van Pelt 2008, p. 125). As with ponderosa pine and western larch, variation in crown structure is a function of age, productivity, and crown damage (Van Pelt 2008, p. 125). Naturally, not all of the trees in one series will advance to the next (Van Pelt 2008, p. 125). For example, competition-based mortality will ensure that most of the trees in classes 1C and 1D do not make it to the next stage (Van Pelt 2008, p. 125).

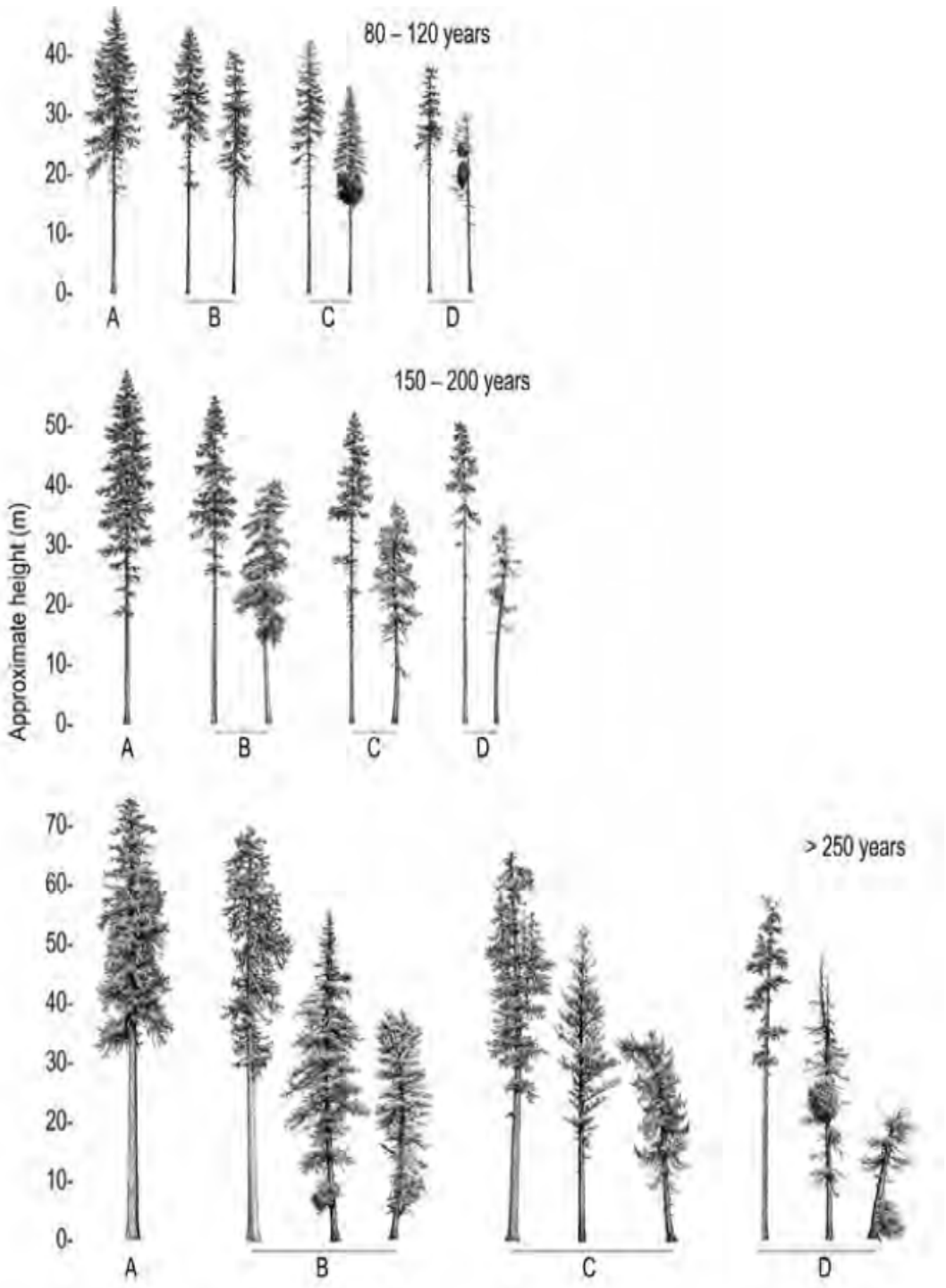


Figure 21. Douglas-fir crown form and tree vigor on the Payette National Forest.

Figure 21 shows idealized forms representing three age and four vigor classes (A-high vigor to D-low vigor). Vigor is a function of site productivity and response to disturbance and environmental stress. More than one individual is shown for vigor classes B through D to illustrate possible variations. Competition-based mortality usually ensures that most trees in vigor classes C and D do not survive to the next age class.

Table 3. Rating System for Determining Douglas-fir Legacy Trees

Bark Condition, Lower One-third of Tree[a]	Score
Hard, Bony Bark with Small Fissures	0
Hard Bark with Moderately Deep Fissures (2 to 4 inches)	1
Deep Fissures Present (>4 inches)	3
Knot Indicators on Lower One-third of Tree	**Score**
Branch Stubs Present	0
Old Knot/Whorl Indicators Visible	1
No Knot/Whorl Indicators Visible	3
Lower Crown Indicators	**Score**
No Epicormic Branches	0
Small Epicormic Branches Present	1
Large and/or Gnarly Epicormic Branches Present	3
Crown Form (Refer to Figure 20)	**Score**
Similar to a Tree in Top Row	0
Similar to a Tree in Middle Row	3
Similar to a Tree in Bottom Row	5
Scoring Key[b]	
<3	Young Tree
3 - 6	Mature Tree
≥7	Legacy Tree

[a]Determine bark conditions on the uphill side of tree near DBH
[b]Choose one score from each category and sum scores to determine developmental stage.

Definintions

Crown Ratio: The ratio of crown length to total tree height, after accounting for gaps in the crown.

DBH: Tree diameter at 4.5 feet above ground level.

Hawksworth Rating: A system for rating dwarf mistletoe infections. The crown is looked at in thirds with the crown divided horizontally. The percentage of limbs infected is determined in each third. If more than 50% are infected, the rating for that third is 2. If less than 50% are infected, the rating is 1. If there is no infection, the rating is 0. The ratings for the three thirds are added together to determine a rating from 0 to 6.

Large Tree Size Class Stand: Stands with at least 10% canopy closure from 20-inch DBH and larger trees.

Ephemeral Streams: Streams that flow only during periods of high run-off.

Bed or Bank of Ephemeral Streams: Area along streams scoured or shaped by flowing water.

Overstory: The canopy layer made up of large mature trees as opposed to the understory sapling size trees.

Dominant Trees or Co-dominant Trees: Trees that are a part of the primary overstory canopy layer.

Crown Separation: The horizontal distance between tree crowns.

Riparian Conservation Areas (RCA): Perennial streams have a 240-foot RCA and a 120-foot no-cut zone. Intermittent streams have a 120-foot RCA and a 30-foot no-cut zone. The no-cut zones are marked on the ground with orange paint.

Legacy Trees: See attachment.

(b) Additional trees to be cut, if any, are marked by Forest Service with __Blue_____ tracer paint.

(c) Cutting unit boundaries and other trees that shall be left uncut are marked by Forest Service with __Orange_____ tracer paint.

Appendix 8
Proposed Forest Plan Amendment

Introduction

Alternative 4 would require a site-specific, non-significant amendment (Forest Service Handbook [FSH] 1926.51) of the Forest Plan. Specifically, the Forest-wide standard TEST15 (USDA Forest Service 2003a, p. III-12), "Unless a broad-scale assessment has been completed that substantiates different historical levels of unsuitable habitat, limit disturbance within each LAU as follows: If more than 30% of lynx habitat within a LAU is currently in unsuitable condition, no additional habitat may be changed to unsuitable habitat as a result of vegetative management projects."

Canada Lynx Conservation Assessment and Strategy

The 2003 Forest Plan adopted the 2000 Canada Lynx Conservation Assessment and Strategy (2000 LCAS) (Ruediger et al. 2000), by adopting conservation measures dependent on risk factors for lynx as Forest Plan Standards, Guidelines, Goals, or Objectives. The 2000 LCAS conservation measures identified the delineation of lynx analysis units (LAUs) and additional measures, such as TEST15 for those LAUs. The 2000 LCAS identified science limitations for lynx and lynx habitat. Since then many additional studies have occurred advancing what is known about lynx and lynx habitat. Revision of the 2000 LCAS was initiated in September 2010. The 2013 LCAS (Interagency Lynx Biology Team 2013) is a full revision, incorporating all prior amendments and clarifications, substantial new scientific information that has emerged since 2000, including related parts of the Lynx Recovery Plan Outline, as well as drawing on experience gained in implementing the 2000 LCAS (Interagency Lynx Biology Team 2013).

In 2005, the U.S. Fish and Wildlife Service prepared a recovery outline, which provides interim guidance for consultation and recovery efforts, until a formal recovery plan has been approved.

Under the recovery outline, lynx habitat was stratified into core, secondary, and peripheral areas, based on lynx occupancy, reproduction, and use, as documented by historical and current records. The 2013 LCAS made several major changes to the 2000 LCAS, including stratifying lynx habitat into core areas and secondary/peripheral areas, along with conservation measures for those habitat types.

The 2003 Forest Plan adopted conservation measures from the 2000 LCAS; those conservation measures changed in the 2013 LCAS. The conservation measure identical to TEST15 is now a conservation measure for core areas in the 2013 LCAS and only the core areas have LAUs delineated. In the 2013 LCAS, the Payette National Forest is identified as a secondary/peripheral area, TEST15 is not included as a conservation measure, and LAUs are not to be delineated.

Background

Vegetation

Many of the stands proposed for treatment in Alternative 4, which would contribute to unsuitable lynx habitat, exceeding the 30 percent threshold, are found in the following potential vegetation groups (PVGs). In addition, treatment acres are proposed in currently suitable lynx habitat,in order reduce fuel loads, to thin seral species trees found in higher elevation stands, and to increase the presence of trace tree species, such as quaking aspen (*Populous tremuloides*) and whitebark pine *(Pinus albicaulis)*.

Potential Vegetation Group 7—Warm, Dry Subalpine Fir: This group represents warmer, drier environments in the subalpine fir zone. Elevations range from 4,800 feet to 7,500 feet.

At lower elevations, this group is found on steep, north-to-east aspects, but shifts to south-to-west aspects as elevation increases. Adjacent sites at lower elevations are Douglas-fir, or grand fir, and these commonly intermix where topography controls cold air flow. Douglas-fir is the most common cover type throughout this PVG. Ponderosa pine may be found at the warmest extremes, particularly where this group grades into the Douglas-fir, or grand fir zone. Lodgepole pine or Engelmann spruce may occur at cool, moist extremes, but these cover types rarely dominate. Understories are commonly shrubby and include mountain maple (*Acer glabrum*), mountain ash (*Sorbus scopulina* or *S. sitchensis*), serviceberry (*Amelanchier alnifolia*), and scouler willow (*Salix scouleriana*). Historical fire regimes were generally mixed2, although mixed1 fires may have occurred where ponderosa pine was maintained. A mixture of burning patterns has created a mosaic of early seral stages. With a recent history of fire suppression, these sites are losing their mosaic pattern and becoming more uniform. Unless thinned to maintain diversity, the risk of extensive, stand-replacement fire and insect epidemics at these sites will increase.

Potential Vegetation Group 9—Hydric Subalpine Fir: Seasonally high water tables control this group; its extent may be small in some areas, depending on the presence of those conditions. Elevations range from 9,000 feet, to as low as 4,500 feet in frost pockets and along cold air drainages. This group most commonly occurs on wet toe slopes, stream terraces, seep areas, and old bogs. Cover types are lodgepole pine, followed by Engelmann spruce and subalpine fir. Early seral conditions usually support lodgepole pine, because this species can tolerate intermittent high water tables and cold air that often accumulates. In severe frost-prone areas, lodgepole pine can persist for long periods. In other areas with better cold air drainage, Engelmann spruce and subalpine fir rapidly establish under the lodgepole pine. Understories in this group are primarily dominated by herbs and grasses that require the seasonal influence of a high water table. Shrubs are sparse, although Labrador tea (*Ledum glandulosum*) can dominate some sites. Historically, fire was lethal in this group, although underburns may have occasionally taken place. Ignitions more likely occurred on adjacent drier slopes, and burning in this group likely depended on weather conditions before and at the time of the ignition. Estimates of fire frequency range from 140 to 400 years. Generally, ignitions occurred on adjacent drier sites and the fire was wind-driven into these sites. Fire patterns could range from a high-intensity crown fire to a patchy underburn with occasional torching of tree clusters, depending on the burning conditions.

Potential Vegetation Group 10—Persistent Lodgepole Pine: This group is common throughout the subalpine fir zone. It represents cold, dry subalpine fir sites that range in elevation from over 9,200 feet down to 5,200 feet in frost pockets. Lodgepole pine is the dominant cover type, although small amounts of other species may occasionally occur. Understories may be sparse. Generally, grasses and scattered forbs are the most common understory components. Shrubs are sparse and consist mainly of low-growing huckleberries, including dwarf huckleberry (*Vaccinium caespitosum*) and grouse whortleberry (*V. scoparium*). Historically, this group experienced lethal fire, although nonlethal fires may have occurred during stand development. Lodgepole pine is more often nonserotinous in western portions of the Forest and appears to become more serotinous when moving easterly. Within the Forest, lodgepole pine may reproduce in areas that experience nonlethal fires. The result is more vertical stand diversity in some areas than is often found where lodgepole pine is mostly serotinous. Over time, the combinations of these low-intensity events, subsequent reproduction, and mountain pine beetle (*Dendroctonus ponderosae*) mortality would have created fuel conditions that allowed lethal fires to occur under the right weather conditions. Infrequent stand-replacing fires—usually interspersed with a few underburns and mountain

pine beetle attacks—typified the historical process. Stand-replacement fires have occurred approximately every 100 to 300 years, with mixed severity burns occurring every 25 to 70 years.

Potential Vegetation Group 11-High-elevation Subalpine Fir (with Whitebark Pine): This group occurs at the highest elevations of the subalpine fir zone and generally represents the upper timberline conditions. It often grades into krummholz or alpine communities. Whitebark pine is a major seral species in this group. Engelmann spruce and subalpine fir are the climax co-dominates. In some areas, whitebark pine serves as a cover for Engelmann spruce–subalpine fir establishment. Understories are primarily forbs and grasses tolerant of freezing temperatures, which can occur any time during the growing season. Shrubs are sparse due to the cold, harsh conditions. Historically, the fire regime in this group is characterized as mixed2, although the effects of fires have been highly variable. Ignitions are common, due to the high elevation; however, fuel conditions are historically sparse, due to the cold growing conditions and shallow soils. Therefore, fire effects have been patchy. Fire regimes are mixed2, with whitebark pine being a major seral component.

Alternative 4 proposes treatment of 2,259 acres in PVGs 7, 9, 10, and 11. (DEIS p. 3-41).

Quaking Aspen: Quaking aspen is the most broadly distributed tree species in the Idaho Southern Batholith, occurring within 10 of the 11 PVGs; however, aspen is strictly a successional component of these systems. Under historical conditions, quaking aspen has been a more common community type within those habitat type classes experiencing a frequent (<50 years) fire return interval with mixed severity. Fire is considered a natural and necessary feature of the aspen seral community type. Fire suppression efforts and grazing have significantly reduced the natural fire processes within the quaking aspen communities. The result has been a major shift from a preponderance of young aspen communities to a preponderance of mature aspen communities throughout the planning landscape.

Effects Common to All Action Alternatives

Many aspen stands throughout the analysis area have been negatively impacted by conifer competition and lack of grove/landscape disturbance factors, such as wildfire. Conifer species tend to draw a significant amount of water away from aspen stands, affecting riparian, meadow, and aspen communities, which ultimately changes the structure and composition of the forest. In all action alternatives, there would be a re-establishment of aspen stands, where they have departed from desired conditions, as described in Campbell and Bartos (2000). Specifically, all action alternatives reduce conifer canopy cover in the short term, to approximately 25% or less; prescribed burning would maintain a mosaic canopy closure in the long term (Table 3-21). All action alternatives would promote aspen stands that vary by patch sizes, size classes, and densities. The primary difference is that Alternatives 2 and 4 have more aspen treatment acres. Restoration of aspen ecosystems is also expected to support vegetation diversity and increase habitat quality for terrestrial wildlife species.

Unlike Alternative 1, all action alternatives allow treatments that would reduce conifer encroachment and probability for uncharacteristic wildfire within aspen stands. Additionally, maintaining these stands with fire would further promote aspen within the analysis area for the long term.

Alternative 4

Aspen in both climax stands and as a seral component of coniferous stands

Similar to Alternative 2, Alternative 4 has 1,087 acres of aspen treatments (CT-ASP) in PVGs 5, 6, 7, and 9. Aspen also occur throughout PVGs 2, 10, and 11. Other treatments (e.g., CT-FT, NCT, FT-PC-MSw) would also enhance aspen in areas where there is incidental aspen, but the densities of aspen are not high enough to justify aspen enhancement as the primary purpose of treatment. Alternative 4 has the most treatment potential in these PVGs (e.g., more than Alternative 2). All treatments would emphasize aspen restoration where aspen stands are present.

Whitebark Pine

The decline of whitebark pine, and other distressed 5-needle white pines, was brought to the attention of the Chief of the U.S. Forest Service, through the reports *Managing for Healthy White Pine Ecosystems in the United States to Reduce the Impacts of White Pine Blister Rust* (Samman et al. 2003) and *Whitebark Pine in Peril: A Case for Restoration* (Schwandt 2006).

Alternative 4 proposes 357 acres of potential treatments in PVG 11 and, thus, possesses the most potential to maintain and promote whitebark pine in the analysis area. All treatments would emphasize whitebark pine restoration, where thespecies is present, and would specifically involve reducing subalpine fir densities, collecting cones, and planting rust-resistant seedlings.

Canada Lynx

The Canada lynx is listed as a threatened species under the ESA, as amended. The guiding document for lynx management in the contiguous United States is the *Lynx Conservation Assessment and Strategy* (2000 LCAS, Ruediger et al. 2000); management of lynx is addressed within LAUs. Lynx analysis units are defined as units that approximate an area of source habitat sufficient to provide a home range for an adult female lynx. LAUs (Figure 3-11) and a lynx source habitat model (Figure 3-12) were identified through consultation with the U.S. Fish and Wildlife Service and are used to evaluate lynx habitat and the effects on lynx of agency activities.

Lynx use late-seral forests for denning, rearing their young, and hunting alternative sources of prey (Ruggiero et al. 1999). Small patches of old forest with down wood provide denning habitat (Wisdom et al. 2000). The common component of denning habitat is large amounts of either logs or root wads, which provide escape and thermal cover for kittens. These late-successional forest stands also may provide refuge from inclement winter weather and summer drought.

Lynx foraging habitat supports its primary prey, the snowshoe hare (*Lepus americanus*) and/or important alternate prey, particularly red squirrels (*Tamiasciurus hudsonicus*), but also mice and grouse (especially during summer) (Ruggiero et al. 1994). Lynx primarily forage in early seral forests and in some mid-seral forests that support high numbers of prey. The best quality snowshoe hare habitats support a high density of young trees or shrubs (4,500 stems or branches per acre), especially with branches that protrude above the snow. These conditions may occur in early successional stands, following some type of disturbance, or in older forests, with a substantial understory of shrubs and young conifers. Red squirrel densities tend to be highest in mature cone-bearing forests with high quantities of logs (Ruediger et al. 2000).

Vegetative communities capable of providing source habitat conditions include PVGs 3, 7, 8, 9, 10, and 11 (Egnew et al. 2015) (Figure 3-12). Source habitat for lynx was assessed within the Middle Fork Weiser LAU. The Project area contains 7,427 acres of lynx habitat (referred to as “source habitat capacity”); currently, approximately 6,812 acres (92%) is in a suitable condition (“source habitat”). These numbers are based on the acreage of suitable habitat that was consulted on with the Fish and Wildlife Service in 2008 (USDA Forest Service 2008) for the Weiser River Watershed. During our current analysis, we used more recent vegetation data, which included changes in PVG assignments and use of a new lynx habitat model that determines acreage of source habitat. Some of these numbers may change slightly, as we work more with the new lynx model.

No lynx observations have been documented within the Project area. Incidental track surveys were conducted by snowmobile, while conducting trail camera surveys during the winters of 2006 through 2013, along the mountain crest running north–south on the east boundary of the Project area; no lynx tracks or photos were identified. Although the Project area contains LAUs established with the 2003 Forest Plan, this portion of the Forest is not considered part of a core lynx population due to the lack of observations, lack of documented reproduction, and habitat that is isolated from core lynx populations. Lynx are more likely to occur in the more remote areas of the northwest and northeast parts of the Forest, but even in those areas, no recent observations have been reported. This viewpoint is supported by the revised, third edition of the LCAS (2013 LCAS, Interagency Lynx Biology Team 2013), which identifies the Project area as secondary habitat for lynx. The 2013 LCAS suggests habitat should be managed for a mosaic of habitat classes that would provide for lynx foraging, traveling, and denning year round. The secondary habitat would support any lynx that may use the area while moving from one core area to another.

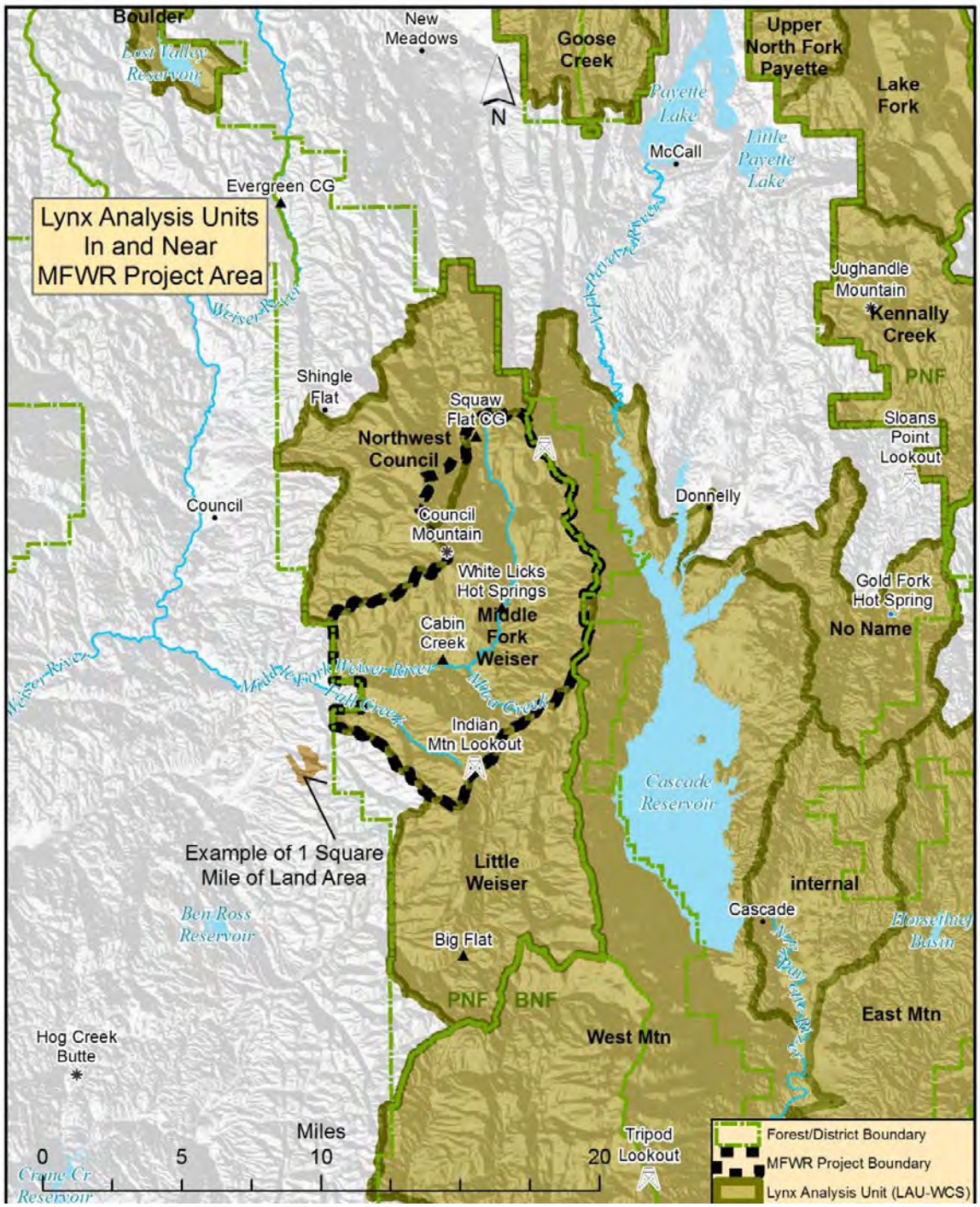


Figure 1. Lynx analysis units (LAUs) identified in and adjacent to the Project area

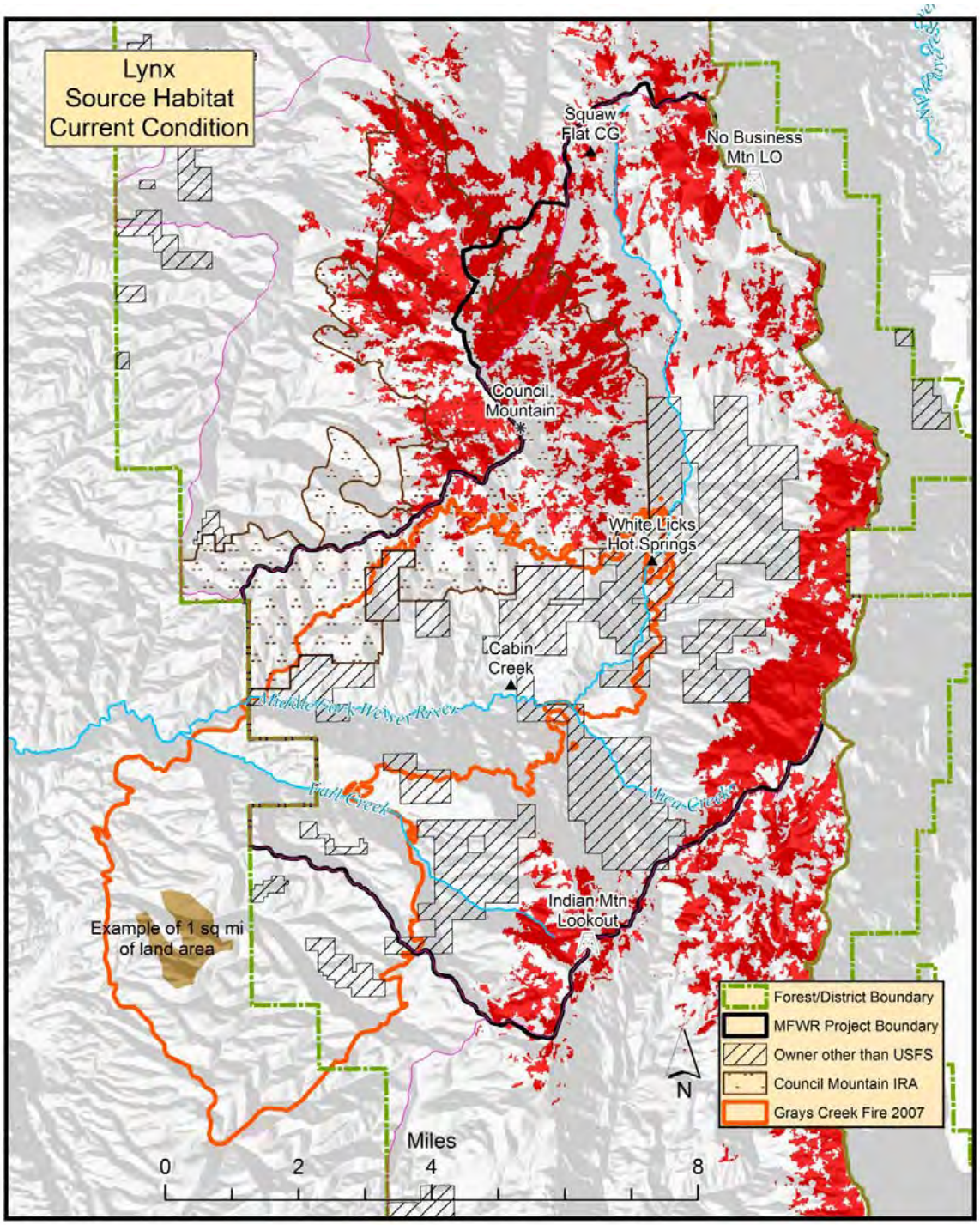


Figure 2. Current condition of modeled lynx source habitat in the Project area

Effects Common to All Action Alternatives

Under all of the action alternatives, prescribed fire would be used to reduce wildfire fuel loads on the ground. These burns would not occur in forested stands in lynx habitat. Because the PVGs used to describe lynx source habitats are all forested components of the LAU, the burns do not show as an effect to lynx habitat under the lynx habitat model. Some burning outside of the non-forested patches, removing small amounts of trees along the edges of adjacent forested stands. This small number of trees burned would be negligible and unmeasurable.

The types of treatments in under Alternative 4 would be identical to Alternative 2. Alternative 4 addresses internal and external comments concerning additional restoration in higher elevation stands that contain a viable seral tree component. This alternative would treat stands in PVGs 7–11 that have a viable seral species component of mature ponderosa pine, Douglas fir, and western larch, in addition to those stands proposed for treatment under Alternative 2. This is based on the direction in the 2013 LCAS, which provides flexibility of forest management in "Secondary Areas" that do not support core populations of lynx.

Alternative 4 would alter more than 30% of suitable lynx habitat to an unsuitable condition in the short term (2000 LCAS). However, with an infestation of multiple species of insects ongoing in most of the high elevation stands, if these sites are left to natural conditions created by this infestation, much of the area would become denning habitat, which would mean a large conversion from foraging and traveling habitats to denning habitat. The 2000 LCAS suggests denning habitat be maintained in patches greater than 5 acres, so that at least 10% of the LAU is denning habitat. The insect infestation would likely create more dead, dying, and down trees, increasing denning habitat. These conditions would also increase the wildfire fuel load in these stands.

Patch cuts in insect-infested areas would provide small, scattered openings that would promote the maintenance of shrubs, such as scouler willow (*Salix scouleriana*), huckleberry (*Vaccinium* spp.), rose (*Rosa* spp.), spirea (*Spirea* spp.), snowberry (*Symphoricarpos* spp.), and western service berry (*Amelanchier alnifolia*). Patch cuts would also provide sites for regeneration of spruce, subalpine fir, and lodgepole pine, all of which support snowshoe hare source habitats. Patch cuts also provide areas of lower fuel loads, which have the potential to shift a crown fire to a ground fire, possibly preventing a stand-replacement wildfire. Free thin harvest would also open the canopy, providing sites where shrub and regenerating trees can support snowshoe hare habitat. Both treatment approaches would provide lynx foraging habitat directly adjacent to, or very close to, denning habitat (Ruediger et al. 2000). In the long-term, Alternative 4 would provide the best support of lynx source habitat in the LAUs, while producing a mosaic of habitats, which would provide lynx foraging, traveling, and denning habitat in the long term.

The Payette Forest Coalition (PFC) has expressed interest in exploring ways to increase the diversity in forested stands at higher elevations. As a Secondary Area in the lynx recovery effort, the Forest could play an important role in providing a greater mosaic of lynx habitats. The Forest could provide security, foraging, and denning support to lynx that may be moving among core lynx populations. If the Forest Service manages the Forest to enhance this habitat mosaic, and to maintain it into the future, this area could better support the recovery of lynx in Idaho, by providing conditions for genetic interchange among core populations. .

ESA Determinations

Alternatives 2, 3, and 4 *May Effect, but are Not Likely to Adversely Affect* the Canada lynx or its habitat.

Forest Plan Direction

The Payette National Forest Land and Resource Management Plan was completed in 2003. It establishes the direction for all aspects of forest management. The following desired condition is of most direct relevance to the Big Creek Restoration and Access Management Plan and is excerpted here for reference:

> From Forest Plan page III-8, Threatened, Endangered, Proposed, and Candidate Species: *"Habitats for Threatened and Endangered Species are managed consistent with established and approved Recovery Plans. Management actions either contribute to, or do not prevent recovery or de-listing of these species. Habitats for Proposed and Candidate species are managed to help preclude listing as Threatened or Endangered under the Endangered Species Act (ESA). Degrading effects from Forest programs are at levels that do not threaten the persistence of Threatened, Endangered, Proposed, or Candidate species populations."*

As Forest Plan (USDA Forest Service 2003a) management direction, a standard is a "binding limitation placed on management actions. It must be within the authority and ability of the Forest Service to enforce. A project or action that varies from a relevant standard may not be authorized unless the Forest Plan is amended to modify, remove, or waive application of the standard."

Alternative 4 would mechanically treat vegetation in high elevation lynx habitat in the Middle Fork Weiser River project area. After treatment, more than 30% of lynx habitat within the LAU would be in unsuitable condition. Therefore, Alternative 4 may be inconsistent with the Forest Plan direction regarding management of lynx habitat. Forest-wide standard TEST15 on page III-12, Management Direction for Threatened, Endangered, Proposed, and Candidate Species, of the Forest Plan, states:

> *Unless a broad-scale assessment has been completed that substantiates different historical levels of unsuitable habitat, limit disturbance within each LAU as follows: If more than 30 percent of lynx habitat within a LAU is currently in unsuitable condition, no additional habitat may be changed to unsuitable habitat as a result of vegetative management projects. Fire use, or fire hazard reduction and associated vegetation management activities within the wildland urban interface watersheds, that develop or maintain fuel profiles needed to reduce the risk of wildfire threats to the wildland urban interface areas, are NOT bound by this standard.*

Project Specific Forest Plan Amendment

The Forest Plan would be amended for this project specific activity. This plan amendment would allow the amount of unsuitable lynx habitat in the Middle Fork Weiser LAU of the Middle Fork Weiser River project to exceed 30%. This project specific amendment would apply only for the decision made in this project. The effective date of this project specific

amendment would be on the date the project may be implemented in accordance with the administrative review regulations at 36 CFR 218.

Although this standard would be amended, the benefits to lynx habitat outweigh the temporary loss of suitable habitat. The increase in vegetative diversity in lynx habitat would also benefit declining vegetative species, such as the quaking aspen and whitebark pine.

The impacts of this amendment will be analyzed in the specialist reports and summarized in the environmental impact statement. The environmental impact statement will be made available for public review and comment. Should Alternative 4 be selected by the decision maker, it will also be subject to consultation with affected Tribes, US Fish and Wildlife Service, and NOAA Fisheries. As part of one of the alternatives analyzed in the Middle Fork Weiser River Landscape Restoration Project, this amendment will also be subject to the objection process prior to release of a final decision.

This forest plan amendment, its analysis, and the decision document will comply fully with 36 CFR 219.13 regarding Plan amendments and administrative changes under the 2012 Planning Rule.

Appendix 9

Response to Comments

PAYETTE NATIONAL FOREST
Middle Fork Weiser River Landscape Restoration Project – Appendix 9: Response to Comments
45-DAY PUBLIC COMMENTS TO THE DEIS
ANALYSIS PER 36 CFR 218

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Abbreviations

Forest Plan:	USDA Forest Service. 2003a. Payette National Forest land and resource management plan.
The Forest	Payette National Forest (or PNF)

#	Comment / Concerns	Forest Service Response
1. Artley, Dick*		
**Because Mr. Artley's comments are voluminous, a summary of his comments is listed below (FSH 1909.15, Chapter 20, 25.1(b)). All issues identified in his comments have been included in this table and a response made. Further response to Mr. Artley's cited literature and Opposing Views attachments can be found in FEIS Appendix 10, Response to Literature and Opposing Views. Many of the cited articles and opposing views presented are 15 to 20 year old opinion editorials that do not represent the best available scientific information. Please note that Mr. Artley's comment letter and attachments are included in full on the Project website: http://data.ecosystem-management.org/nepaweb/nepa_project_exp.php?project=41687.*		
1.1	I ask each IDT member to have the courage to read these comments with an open mind. Please compare the statements and recommendations authored by independent scientists I present in these comments with what the USFS teaches it's employees should be done to "restore" the forest. Be honest with yourself. The **Opposing Views Attachments** contain hundreds of quotes written by well-respected Ph.D. scientists. Most are (were) college professors with no interest in selling timber or not selling timber. As you will see, they are interested in the truth. **Comment:** It's clear that the line-officers on the Payette National Forest did not learn from the Agriculture Department's inspector general's findings based on a 1999 audit of the USFS timber program. The first sentence of the audit findings says this: "Federal auditors have found that the Forest Service frequently fails to assess, prevent or correct environmental damage from logging on the national forests." This DEIS smoothes-over and minimizes the "environmental damage from logging" that will be caused by the Middle Fk Weiser timber sale." A few IDT members know this but their position pays to well to jeopardize it by doing the right thing for future generations of Americans. The complete text of the USDA audit can be read at the following link:	Comment noted. The New York Times article refers to 12 specific timber sales from 1995-1999 and that Federal auditors found logging was poorly done, streams and wildlife were not being adequately protected, and mitigation measures were not incorporated. The Middle Fork Weiser River project will have Harvest Inspectors and Timber Sale Administrators on the ground during the entire timber harvest process to ensure compliance. In addition project design features, BMPs, and monitoring are incorporated in the FEIS and followed up by resource specialists to ensure compliance.

#	Comment / Concerns	Forest Service Response
	http://www.nytimes.com/1999/02/05/us/audit-faults-forest-service-on-logging-damage-in-us-forests.html Supervisor Lannom, its clear you have already selected the alternative you will implement. Now you are passing the Middle Fk Weiser commercial timber sale through the NEPA process to make it legal. Your IDT members (who know better) are helping you. You made your decision prior to scoping which informs the people who own the land what you plan to do to their land. This is safe isn't it? You knew if you kept things secret from the public they wouldn't have a chance to submit their concerns. My how convenient.	
1.2	**Associate Chief Sally Collins describes how the new USFS deals with timber. Her statements obviously missed the Payette NF.** Forest Service Associate Chief Sally Collins ***"The Future of Partnering with the Forest Service"*** A speech presented at the Annual Meeting of the National Association of Conservation Districts Atlanta, GA—February 8, 2005 http://www.fs.fed.us/spf/coop/library/NACDspeech.pdf	To continue on with her speech after the selected reference Associate Chief Collins goes on to list several of the threats: Fire and Fuels, Invasive species, Loss of open space, non-managed recreation, the backlog in facilities and restoration projects, water quality problems and finally ozone and carbon. The Middle Fork Weiser River project addresses the issues of fire and fuels, restoration, and improving watershed resources through road decommissioning. Recreation improvements are also proposed throughout the project area.
1.3	**Deputy Chief Jim Furnish reflects on his USFS employment** http://www.towardnaturalforest.com/	Thank you for your comment.
1.4	**Comment:** Ask yourself if Mr. Furnish would consider your Middle Fk Weiser timber sale one that: * uses agency dogma to further the "agency's timber-first priority" * will create a "landscape of cookie cutter homogeneity" * will "take from the forest at the expense of future generations" * ignores emerging "societal values inviting the agency to change" * "explicitly embraces the mandate of ecosystem management" I suggest all USFS employees who wish to learn the truth buy Mr. Furnish's book at: http://www.towardanaturalforest.com/	Comments noted.

#	Comment / Concerns	Forest Service Response
	Please have the courage to read the book. Finally, ask yourself if you should be assisting to prepare the DEIS. Does the Payette National Forest ignore emerging "societal values" that scream out for the "agency to change"? **Comment:** I saw it myself during my 31 years with the USFS. Here are the facts. The agency routinely and repeatedly showers its employees with information intended to teach them that satisfying the agency's timber agenda transcends all other actions … including amenity resource protection. Agency foresters are taught timber is king and it's their job to create private industrial tree farm conditions in the national forests. Their rewards system is based on timber outputs and acres "mechanically treated" (a.k.a. logged). Ask yourself why they describe logging using euphemisms.	
1.5	**Issue #1: Logging road construction causes significant ecological harm. Please analyze an action alternative in detail that does not construct any new roads (temporary or system).** **Comment:** Page 4 indicates "Up to 9.7 miles of planned new and 34.8 miles of existing unauthorized routes would be used as temporary roads and obliterated after use." Competent USFS line-officers do not let ATV riders locate their roads. How long have these "unauthorized routes" been ignored and allowed to pump sediment? This is not a rhetorical question. You say you will "obliterate" the unauthorized routes used as temporary roads after use. Competent USFS line-officers would not allow 34.8 miles of existing unauthorized routes to exist after they were discovered.	The alternatives analyzed have different effects on the NFS and unauthorized roads on the landscape. All alternatives have a significant amount of road decommissioning to deal with the high road densities in the project area from past management. Road reconstruction will allow for addressing areas of resource concern on individual roads in the project area. In Alternatives 2 and 3 all proposed road construction is of temporary roads that will be decommissioned after use. This temporary road construction is needed to improve the vegetation to the desired conditions as described in Appendix A of the Forest Plan. Alternative 4 is the only alternative that adds roads to the system to maintain access for future management activities. These roads are not new construction and will be put in long term storage after use. A no new road construction alternative was not analyzed because it would not meet the purpose and need for achieving vegetation desired conditions in the project area. The road system will contain fewer roads on the landscape in all alternatives and have fewer impacts to aquatic and hydrologic resources after project implementation. In the context of this project, "unauthorized" routes refer to non-system roads (i.e., roads not on the National Forest System) that are legacy from past harvest operations, as well as roads that have been created by unauthorized public use. The age range and historic watershed impacts from individual roads is therefore not well documented. FEIS Section 1.3.5 (Historical and Existing

#	Comment / Concerns	Forest Service Response
		Conditions - Soil, Water, Riparian, and Aquatic Resources) provides background on the establishment and persistence of the historic road network.
1.6	**Comment:** A report authored by Gerald Coghlan, WO Acting Director of Engineering in 1998 (17 years ago) indicated there are 372,956 miles of national forest system road (page 5). The agency currently constructs 2,170 miles of system road per year. At this rate there are 410,000 miles now. In addition to that, there is at least double this amount in unsurfaced, sediment producing, outsloped, temporary roads that have not been obliterated and "put to bed." The average distance to the moon (it varies) is 384, 403 miles … and you propose more? Go figure! See: http://www.fs.fed.us/eng/road_mgt/roadsummary.pdf Please read **Opposing Views Attachment #4**.	The Fact sheet at: http://www.fs.fed.us/eng/road_mgt/factsheet.shtml states that in 1998 the Forest Service constructed 215 miles of road which is less than the 2,000 miles stated in the comment. From 1991 to 1997 on average 2,700 miles have been decommissioned annually. In addition, the fact sheet references approximately 60,000 miles of unclassified roads including temporary roads which is less than the 818,000 miles stated as an estimate in the comment. A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views.
1.7	A "no road construction and reconstruction" alternative will likely reduce the sale volume some. However, it stands out among the possible action alternatives that should be analyzed in detail because it reduces the adverse environmental effects while still meeting the purpose and need for the project.	The alternatives analyzed have different effects on the NFS and unauthorized roads on the landscape. All alternatives have a significant amount of road decommissioning to deal with the high road densities in the project area from past management. Road reconstruction will allow for addressing areas of resource concern on individual roads in the project area. In Alternatives 2 and 3 all proposed road construction is of temporary roads that will be decommissioned after use. This temporary road construction is needed to improve the vegetation to the desired conditions as described in Appendix A of the Forest Plan. Alternative 4 is the only alternative that adds roads to the system to maintain access for future management activities. These roads are not new construction and will be put in long term storage after use. A no new road construction alternative was not analyzed because it would not meet the purpose and need for achieving vegetation desired conditions in the project area (FEIS Section 2.1.2). The road system will contain fewer roads on the landscape in all alternatives and have fewer impacts to aquatic and hydrologic resources after project implementation.
1.8	**Comment:** Please don't exclude a "no new road" alternative from analysis in detail by claiming the P&N will not be met. The P&N includes timber harvest but it does not specify a volume of number of acres. The "no new roads" alternative will reduce the acres	The alternatives analyzed have different effects on the NFS and unauthorized roads on the landscape. All alternatives have a significant amount of road decommissioning to deal with the high road densities in the project area from past management. Road reconstruction will allow for addressing areas of

#	Comment / Concerns	Forest Service Response
	treated, but will still meet the P&N since most harvest would still occur. This alternative is very important because it eliminates road-construction related adverse natural resource impacts.	resource concern on individual roads in the project area. In Alternatives 2 and 3 all proposed road construction is of temporary roads that will be decommissioned after use. This temporary road construction is needed to improve the vegetation to the desired conditions as described in Appendix A of the Forest Plan. Alternative 4 is the only alternative that adds roads to the system to maintain access for future management activities. These roads are not new construction and will be put in long term storage after use. A no new road construction alternative was not analyzed because it would not meet the purpose and need for achieving vegetation desired conditions in the project are (FEIS Section 2.1.2). The road system will contain fewer roads on the landscape in all alternatives and have fewer impacts to aquatic and hydrologic resources after project implementation.
1.9	Based on your education and experience will logging 30 square miles and building 44.5 miles of road really improve the resources the P&N claims will be improved by logging? If your answer is "no" you aren't committed yet. Yes reconstructing user located roads creates the same damage as new temporary road construction.	Benefits to each resource and their alignment with the Purpose and Need are analyzed in Chapter 3 of the FEIS. The degree of impacts from temporary road construction depends on how far the existing condition of the landscape departs from undisturbed conditions. By definition, user-created (i.e., unauthorized) roads exist on the landscape in a disturbed state relative to undisturbed hillslopes. In contrast, new temporary roads constructed on previously undisturbed hillslopes represent the largest potential departure from existing conditions. As such, the temporary conversion of unauthorized roads for project purposes will have impacts no greater, and likely less than, construction of new temporary roads on undisturbed hillslopes. This rationale is the basis for leveraging existing unauthorized roads to help minimize project impacts while maximizing project objectives. The project will not build 44.5 miles of temporary road. For practices aimed at mitigating impacts of all temporary roads, please refer to project design features 17 and 18 in FEIS Chapter 2.
1.10	**Comment:** Without exception, road construction and reconstruction are activities that cause damage to some important natural resources in the forest. New road construction is particularly detrimental to aquatic and wildlife resources. Chief Dombeck's statement below supports this fact.	Comment noted. As identified in the statements quoted from Chief Dombeck, roads “often” cause serious ecological impacts. That is not the case for the Middle Fork Weiser River action alternatives.

#	Comment / Concerns	Forest Service Response
	Roads often cause serious ecological impacts. There are few more irreparable marks we can leave on the land than to build a road." Dr. Mike Dombeck, Chief, US Forest Service Remarks to Forest Service employees and retirees at the University of Montana February 1998 Link to statement: https://www.uwsp.edu/cnr/gem/Dombeck/MDSpeeches/CD%20COPY/Chief%20Mike%20Dombeck%27s%20Remarks%20to%20Forest%20Service%20Employees%20and%20.htm **Comment:** Since best science and Dr. Dombeck agree that there are "few more irreparable marks we can leave on the land than to build a road", isn't this is a valid reason to analyze a "no new road" alternative in detail?	The alternatives analyzed have different effects on the NFS and unauthorized roads on the landscape. All alternatives have a significant amount of road decommissioning to deal with the high road densities in the project area from past management. Road reconstruction will allow for addressing areas of resource concern on individual roads in the project area. In Alternatives 2 and 3 all proposed road construction is of temporary roads that will be decommissioned after use. This temporary road construction is needed to improve the vegetation to the desired conditions as described in Appendix A of the Forest Plan. Alternative 4 is the only alternative that adds roads to the system to maintain access for future management activities. These roads are not new construction and will be put in long term storage after use. A no new road construction alternative was not analyzed because it would not meet the purpose and need for achieving vegetation desired conditions in the project area. The road system will contain fewer roads on the landscape in all alternatives and have fewer impacts to aquatic and hydrologic resources after project implementation.
1.11	**Comment:** The Administrative Procedures Act directs judges to set aside an agency action if the court determines that the action is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). A line-officer who ignores best-science and instead makes a Decision on weak, meager evidence provided by people with financial interest in a sale being sold (i.e. IDT members that represent timber and engineering) is guilty of violating the APA. You have done this.	A court's inquiry is limited to whether the agency "considered the relevant factors and articulated a rational connection between the facts found and the choice made. (Baltimore Gas&Elec. Co. v. NRDC, 462 U.S. 87, 105 (1983). Thus the scope of the review under the arbitrary and capricious standard is narrow and a court is not to substitute its judgment for that of an agency. An agency's action is arbitrary and capricious if: • The agency fails to consider an important aspect of the problem (overlooked evidence). In the case of the High Valley project, the important aspect of the problem is that the existing road system is contributing effects to biophysical resources that needs to be addressed; e.g. roads important to the minimum road system identified in the TAP that fall within RCAs need to realigned/ reconstructed so that they fall outside RCAs. • The agency offers an explanation for the decision that is contrary to the evidence. (unwarranted facts) The decision not to consider a "no roads" alternative in detail has been fully described in the last 4 responses. • The agency's decision is so implausible that it could not be ascribed to a difference in view or be the project of agency expertise (Lack logic). The

#	Comment / Concerns	Forest Service Response
		development of the proposed action and the beneficial and/or immeasurable temporary and short term impacts described in previous comments is based analyses completed by resource specialists utilizing best available science to reach their conclusions as to effects disclosed. • If the agency's decision is contrary to the governing law, or the Agency standards are not applied in a consistent manner (A clear error of judgment). As described in Chapter 1 and supported by effects disclosures by resource specialist in Chapter 3, decisions concerning road management in MFWR are consistent with governing law and Agency standards for analysis important to informing decisions made.
1.12	**Comment:** Please don't claim the No Action alternative satisfies this request to analyze a "no new roads" alternative in detail. The timber sale contains some actions that will benefit the ecosystem of the area. A "no new roads" alternative would include these actions. The P&N will still be met because volume will be available from existing roads. A "no new roads" action alternative is reasonable. It will benefit the forested ecosystem, it produces volume and reduces fuels, and eliminates the ecosystem damage caused by roads that is identified in **Opposing Views Attachment #4**. **Request for changes to be made to the final NEPA document:** Analyze a no road construction (including temp roads) action alternative in detail. This would satisfy the P&N. Just as with No Action, this alternative provides the public with the trade-off between the Proposed Action and an alternative with less volume and less environmental impact . . . especially to aquatic resources.	The alternatives analyzed have different effects on the NFS and unauthorized roads on the landscape. All alternatives have a significant amount of road decommissioning to deal with the high road densities in the project area from past management. Road reconstruction will allow for addressing areas of resource concern on individual roads in the project area. In Alternatives 2 and 3 all proposed road construction is of temporary roads that will be decommissioned after use. This temporary road construction is needed to improve the vegetation to the desired conditions as described in Appendix A of the Forest Plan. Alternative 4 is the only alternative that adds roads to the system to maintain access for future management activities. These roads are not new construction and will be put in long term storage after use. A no new road construction alternative was not analyzed because it would not meet the purpose and need for achieving vegetation desired conditions in the project area. The road system will contain fewer roads on the landscape in all alternatives and have fewer impacts to aquatic and hydrologic resources after project implementation.
1.14	**Issue #4 ----- Does spewing poison on national forest vegetation where children might play serve the public? Which will it be --- pleasing Monsanto or killing forest visitors?** As I will show below, hundreds of independent Ph.D. chemists have written literature showing why glyphosate should never be applied anywhere at any time for any reason. Is it worth the risk when there	The MFWR project would not approve use of any herbicides or other treatments of non-native species. This comment and the included attachments and scientific references refer to an issue outside the scope of the MFWR project.

#	Comment / Concerns	Forest Service Response
	are other ways to kill noxious weeds without killing people? You won't be popular when your employees …… and the judge, when the local public finds out you ignored this warning. You cite a tragically outdated 29-year-old, 1987 Payette National Forest Noxious weed and poisonous plant control program. You are smarter than that Supervisor Lannom. A responsible person would never base a life or death decision on a 29 year old USFS document. When dealing with a potential life and death situation most people would want safety determinations based on research done by unbiased scientists. Please do not apply herbicides that contain the chemical glyphosate. I present my reasons below. Supervisor Lannom, if you would not spray a chemical that might cause cancer on your property where children and pets might be, you should not decide to contaminate public land with the same chemical. Why would the FDA start testing food for glyphosate if it was safe?	
1.15	**<u>Issue #5</u> - Some IDT members claim No Action will result in an increased probability of severe wildfires. This is inconsistent with the "best science" quoted below. Indeed, for decades USFS leaders have promised the public that agency projects will be based on "best science." Clearly this is not the case with the Middle Fk Weiser timber sale.** The effects disclosures written by the IDT members all indicate selecting the No Action alternative will be a tragic mistake that will decimate, ravage and annihilate the natural resources and recreation opportunities in the sale area as a result of fire. Where were the fire specialists? Either they didn't read the bungled effects disclosures in Chapter 3 predicting a catastrophic fire if it's not harvested, or they have not kept up with the latest fire science. I invite you and all IDT members to examine independent science explaining how harvested areas interact with fire in **<u>Opposing Views</u>**	The MFWR analysis does not state that logging prevents fire. The FEIS does discuss five alternatives and the acres of movement toward historical fire regimes associated with each. The No Action alternative would allow fuel conditions within the Project area to move furthest from historical fire regimes making it highly susceptible to stand replacing wildfire as outlined in the MRWR Fuels Analysis, FEIS, Section 3.3. A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views.

#	Comment / Concerns	Forest Service Response
	Attachment #3. It contains conclusions written by 66 well respected scientists not affiliated with the USDA. They explain how harvesting an area does not reduce fire starts, fire intensity, or rate of spread. Some demonstrate how logging exacerbates fire behavior. The IDT members base their No Action effects on skewed, untrue so-called fire science authored by USFS employees.	
1.16	**Comment:** Bush appointed timber industry lobbyist Mark Rey to Under Secretary of Agriculture. This put him in charge of the USFS. Rey was sworn in by Agriculture Secretary Ann Veneman on October 2, 2001. Rey's appointment was a calculated move. Rey knew his job was to invent more excuses to commercially log our national forests. Surprise! Rey did his job well. He played on the public's fear of fire after the 2000 and 2002 fires. He knew they would accept anything … even ineffective fuels logging. Now the USFS routinely offers timber sales to reduce hazardous fuels. Prior to 2003 the USFS had no timber sales with hazardous fuels removal in the P&N. I invite you to check this out. Mark Rey's March 3, 2003 testimony to the United States House of Representatives Committee on Resources about the Threat of Wildland Fire and the need to log hazardous fuels can be read at: http://www.wildlandfire.com/docs/2003_n_before/rey_testimony_2003.htm	Testimony recapping the 2002 fire season and giving an outlook for 2003. Mr. Rey iterates that safety of firefighters and communities is our first priority. With the fire adapted ecosystems of North America, we have the challenging task of reducing fuels and the vulnerability of our communities to wildfire while restoring the health of our forests and rangelands. This challenge is national and long term in scope. The 10-Year Implementation Plan and the Wildland Fire Leadership Council will continue to foster cooperation and communication among Federal agencies, States, local governments, Tribes, and interested groups and citizens.
1.17	**Commercial Logging Causes Forest Fires** Published in *FOREST CONSERVATION NEWS TODAY*, July 20, 2002 *OVERVIEW & COMMENTARY* by Forests.org Link: http://forests.org/archived_site/today/recent/2002/grgrurge.htm	Thinning can and does increase potential fire behavior in many forested conditions. Overstory thinning alone can decrease shading from the canopy and decrease sheltering from the wind, thereby increasing potential flame lengths, fire spread rates, and the average number of days that a fire could occur within a stand in a given year. Reducing ground, surface, and ladder fuels with fire in order to make a significant impact on fire behavior are imperative activities in reducing potential fire behavior. Overstory thinning would decrease crown fire potential and promote fire resilient species

#	Comment / Concerns	Forest Service Response
1.18	**Fight Fire With Logging?** **Forestry experts have long known that commercial logging increases the risk of forest fire. So why, critics are asking, does the Bush administration's new fire prevention plan ignore that fact?** By Dan Oko and Ilan Kayatsky Published by Mother Jones magazine, Wed Jul. 31, 2002 Link: http://www.motherjones.com/politics/2002/08/fight-fire-logging	Article in Mother Jones website regarding that the National Fire Plan is "becoming a feeding ground for logging companies" so they can remove the largest diameter trees. The MFWR project is utilizing several methods to achieve the desired goals of creating large diameter open ponderosa pine stands for white-headed woodpecker and to improve habitat for other species families. These include small diameter thin, thinning from below, brush mastication, and prescribed burning.
1.19	**A Burning Issue: Helping Loggers, Hurting Forests** By Dr. Chad Hanson Published on Monday, July 15, 2002 in the Los Angeles Times Link: http://www.commondreams.org/views02/0715-04.htm	Reference it an opinion piece discussing the Sierra Nevada Framework.
1.20	**The wildland fires of 2002 illuminate fundamental questions about our relationship to fire** By Dr. Timothy Ingalsbee Published in the Winter 2002 issue of the The Oregon Quarterly Link: http://www.fire-ecology.org/research/wildfire_paradox.pdf	Article published in the Oregon Quarterly regarding the 2002 fire season and it "was but a harbinger of more frequent severe fire seasons to come' if we do not make changes between society and fires. This includes the damage done by building firelines, dropping retardant or contaminated water (noxious weeds, disease) in pristine areas, lighting backfires kills more than it saves due to the intensity, leave more large diameter trees- they're the ones better able to withstand a fire, and follow the community wildfire standards (clear up to 200 feet from a house in the WUI). A need of the MFWR project is to reduce fuels hazard and risk of crown fire spread to minimize the danger and difficulty of suppressing future wildfires, and enhance future forest resiliency. More intense surface fuel treatments would be focused within the wildland-urban interface.
1.21	**A Report to the President in Response to the Wildfires of 2000** By Lyle Laverty USDA Forest Service and Tim Hartzell U.S. Department of the Interior, September 8, 2000 Link: http://frames.nacse.org/6000/6269.html	The President asked for a report as well as short-term actions towards reducing the wildland urban interface hazards and preparing firefighters for extreme conditions in the future. The 2000 Congressional Research Service (CRS) report pertained to plantations, which is dissimilar to this project. CRS also emphasized need to treat activity fuels, which this project does. The current conditions which the project aims to alleviate are a result of past management. The treatments proposed are aim at getting to conditions that

#	Comment / Concerns	Forest Service Response
		resemble historical range of variability as described in the best available science used for this Project.
1.22	**Western National Forests: A Cohesive Strategy is Needed to Address Catastrophic Wildfire Threats** Published by the Government Accounting Office, GAO/RCED-99-65 Link: http://www.gao.gov/archive/1999/rc99065.pdf	Report to the Subcommittee on Forest and Forest Health, Committee on Resources, House of Representatives on the need for a cohesive strategy on catastrophic wildfire threats. Scientists and agency officials attribute this (on the dry eastside forests) to long periods of fire suppression resulting in denser forests, shifts in tree species composition, and increases in insects and disease. A need of the MFWR project is to reduce fuels hazard and risk of crown fire spread to minimize the danger and difficulty of suppressing future wildfires, and enhance future forest resiliency. More intense surface fuel treatments would be focused within the wildland-urban interface.
1.23	**Timber Industry Fails to Convince Judges that Logging Levels Linked to Wildfires** Published by a New Century of Forest Planning, September 29, 2015 Link: http://forestpolicypub.com/2015/09/29/timber-industry-fails-to-convince-judges-that-logging-levels-linked-to-wildfires/	Thank you for your comment.
1.24	**Commercial Logging for Wildfire Prevention: Facts Vs Fantasies** By Dr. Timothy Ingalsbee Link: http://www.fire-ecology.org/citizen/logging_and_wildfires.htm	Article on how commercial logging does not really benefit wildfire prevention and how commercial logging, road building, grazing etc. can lead to increases in disease, insects and severe fires and now is the time for 'Congress to heed the facts, not fantasies, and develop forest management policies based on science, not politics.' Opinion paper – not a fire scientist.
1.25	**Sierra Nevada Ecosystem Project: Final Report to Congress** Prepared by the USFS Pacific Southwest Research Station, 1996 Link: http://pubs.usgs.gov/dds/dds-43/	Thinning can and does increase potential fire behavior in many forested conditions. Overstory thinning alone can decrease shading from the canopy and decrease sheltering from the wind, thereby increasing potential flame lengths, fire spread rates, and the average number of days that a fire could occur within a stand in a given year. Reducing ground, surface, and ladder fuels with fire in order to make a significant impact on fire behavior are imperative activities in reducing potential fire behavior. Overstory thinning would decrease crown fire potential and promote fire resilient species. All actions are designed to restore vegetative and fuel conditions and would attempt to use fire in conjunction with thinning or use fire alone to reduce the risk of losing key ecosystem processes. However, there are many limitations in using fire

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		alone to restore landscapes. These include funding, personnel availability, impacts to airsheds, seasonal fuel conditions, etc. Thinning provides managers with a more precise tool to move stands toward the desired conditions in a more timely fashion, and given a wildfire event occurring prior to the application of fire, improve the likelihood that wildfire severities would be more representative of historic conditions.
1.26	**More Logging Won't Stop Wildfires** By Dr. Chad Hanson and Dr. Dominick DellaSala Published in the New York Times on July 23, 2015 Link: http://www.nytimes.com/2015/07/23/opinion/more-logging-wont-stop-wildfires.html?_r=0	Opinion piece on why the author's oppose pending legislation to allow more post-fire salvage logging.
1.27	**Historical and current forest landscapes in eastern Oregon and Washington. Part II: Linking vegetation characteristics to potential fire behavior and related smoke production** By: Mark H. Huff; Roger D. Ottmar; Ernesto Alvarado; Robert E. Vihnanek; John F. Lehmkuhl; Paul F. Hessburg; Richard L. Everett, 1995 Link: https://www.frames.gov/rcs/6000/6691.html	Thinning can and does increase potential fire behavior in many forested conditions. Overstory thinning alone can decrease shading from the canopy and decrease sheltering from the wind, thereby increasing potential flame lengths, fire spread rates, and the average number of days that a fire could occur within a stand in a given year. Reducing ground, surface, and ladder fuels with fire in order to make a significant impact on fire behavior are imperative activities in reducing potential fire behavior. Overstory thinning would decrease crown fire potential and promote fire resilient species. All actions are designed to restore vegetative and fuel conditions and would attempt to use fire in conjunction with thinning or use fire alone to reduce the risk of losing key ecosystem processes. However, there are many limitations in using fire alone to restore landscapes. These include funding, personnel availability, impacts to airsheds, seasonal fuel conditions, etc. Thinning provides managers with a more precise tool to move stands toward the desired conditions in a more timely fashion, and given a wildfire event occurring prior to the application of fire, improve the likelihood that wildfire severities would be more representative of historic conditions.
	Fire hazard from precommercial thinning of ponderosa pine. Research Paper (PNW-RP-057) By G.R. Fahnestock, 1968 Link: https://www.frames.gov/rcs/11000/11147.html	Research paper from 1968 discussing the amount of slash created during pre-commercial thinning when the cut stems are left on site and the resulting fire hazard from these fuels

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1.28	**Testimony to the Agriculture, Nutrition and Forestry Committee United State Senate. Hearing to Review Healthy Forests Restoration Act, HR 1904 June 26, 2003** By:, Arthur Partridge Ph.D., Professor Emeritus, University of Idaho Link: http://www.univision.co.za/offer-day-oA2A392Cr1N3B2x_2F2du3g3-music.shtml	Press conference with U.S. Senator Torricelli regarding deforestation is reducing biodiversity and clear cutting leads to severe ecosystem consequences such as: erosion, damage to streams, and even age stands could lead to increases in insects and disease. MFWR resource specialists are well aware of competing needs within the forest and these are addressed in the analysis in Chapter 3 of the FEIS.
1.29	**Study challenges views about Western forest fires, July 23, 2012** By: Scott Sonner, AP Published in the Daily World Link: http://www.thedailyworld.com/sections/newswire/northwest/study-challenges-views-about-western-forest-fires.html	News article giving a brief summary of a study of field notes taken teams of government land surveyors in the mid-1800s attempting to map the nation's wild lands. The transects covered 250 miles in three states.
1.30	**Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States (page 10)** By: Dr. Jack Cohen (a USFS fire physicist) Published in Forest Ecology and Management, issue 256, 2008 http://www.firewise.org/Information/Research-and-Guidance/WUI-Home-Ignition-Research/~/media/Firewise/Files/Pdfs/Research/CohenFuelTreatment.pdf	This document discusses long term fuel planning to create conditions in which fire can occur without devastating consequences. It also identifies the Federal agency dilemma that the home ignition zone largely occurs on private lands and most land management agencies do not have the authority to mitigate the WUI ignition potential directly, so are forced to take indirect routes.
1.31	**Researcher Finds Need for more Prescribed Burning** By Tom Kuglin Published in the Helena Independent Record newspaper, June 17, 2015 http://helenair.com/news/local/researcher-finds-need-for-more-prescribed-burning/article_4a58c3c3-a7bb-5905-a505-4567e8107600.html	Newspaper article on research done by Mark Finney, Ph.D., a research forester with the U.S. Forest Service Fire Lab in Missoula. Finney found that fire "ripped through logged areas," and only units where prescribed fire was introduced showed effectiveness in stopping or mitigating wildfire spread. "This isn't saying that timber harvesting is bad or good, it's just that it doesn't substitute for the change in fuel structure under prescribed burning," he said. The MFWR project plans for prescribed burning to follow the planned mechanical vegetation treatments.
1.32	**"Healthy Forests" and Wildfire Control: Accumulating Scientific Evidence** By Dr. Thomas Power A Montana Public Radio Commentary, December 11, 2006 http://forestcouncil.org/so-called-healthy-forests-and-wildfire-control/	An opinion piece on why we need to accept that if we are careful where and how we live in forests and learn to accept fire as a natural part of a healthy forested landscape, both prescribed fire and natural fires, we can both protect ourselves and enjoy the benefits of diverse natural forests.

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1.33	**Study challenges views about Western forest fires** By Scott Sonner AP Published in the Daily World, July 23, 2012 http://www.thedailyworld.com/sections/newswire/northwest/study-challenges-views-about-western-forest-fires.html	News article giving a brief summary of a study of field notes taken teams of government land surveyors in the mid-1800s attempting to map the nation's wild lands. The transects covered 250 miles in three states.
1.34	**Here are the deplorable logging/fire No Action effects disclosures authored by some IDT members:** **Comment:** Dr. Jack Cohen (a USFS employee) and the 11 independent scientists quoted above all indicate logging does not affect fire starts or intensity, yet Mr. Almack wrote these No Action effects: Wildlife Old Forest Habitat "These stands are outside of HRV and are increasingly vulnerable to stand-replacement wildfires. Uncharacteristic wildfires have the potential to alter these forests to a successional stage that could further slow the attainment of OF characteristics for many years." (pg 264) Pileated Woodpecker "Combined with the lack of source habitat improvement for Habitat Family 1, the Project area forests would be more susceptible under the No Action Alternative to long-term alteration from uncharacteristic, stand-replacement wildfire." (pg 270) American Three-toed Woodpecker "The American three toed woodpecker would likely benefit under the No Action Alternative from the increased susceptibility of forest stands to uncharacteristic wildfires, and the resulting provision of snags as feeding sites." (pg 281) Fisher "Combined with the lack of source habitat improvement for Habitat Family 1, the Project area forests would be more susceptible under the No Action Alternative to long-term alteration from uncharacteristic, or even stand-replacement wildfire." (pg 299) Canada Lynx "Combined with the lack of source habitat improvement for Habitat Family 1, the Project area forests would be more susceptible under the No Action Alternative to long term	Out of Context. Dr. Cohen's work is about the Fire Wise program in WUI. Reduction of fuels in the Home Ignition Zone will decrease the risk to a home catching fire in a WUI area. Fuels reductions projects have shown to be effective in decreasing the intensity of wildfires especially when designed in WUI areas as Dr. Cohen points out in his own research. There are little to no values at risk in the Project area. WUI treatments for the MFWR Project consist of main ingress/egress routes treated with shaded fuelbreaks. Other Fuels treatments are designed to prepare stands for prescribed fire by reducing ladder fuels. Other vegetation treatments are designed to bring stands to the desired conditions as described in the Forest Plan. This is the basis of what the Wildlife Biologist is describing with the No Action alternative effects. See FEIS section 3.4 for updates from the DEIS. A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views. Relevant research has been reviewed and cited, local scientific data and knowledge, and analysis are all used to support the conclusions discussed in Chapter 3 of the FEIS by resource area. The best available scientific information has been used, including relevant information provided in comments by members of the public. The No Action alternative for elk was missing from the DEIS. It is included in the FEIS. The discussion identifies that under Alternative 1, which is Current Condition, the large number of unauthorized routes would remain accessible to illegal use, thereby continuing the degradation of overall elk security in the Project area. The elk analysis deals only with Security Areas, which are created

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	alteration from uncharacteristic, or even stand-replacement wildfire." (pg 316) Wolverine "With no action, there would be no source habitat improvement for Habitat Family 1, and the Project area would be more susceptible to long-term alteration from uncharacteristic, or even stand-replacement wildfire." (pg 326) Rocky Mountain Elk **The No Action effects disclosure is missing!** In the final NEPA document please tell the public why you reject the research conclusions of well respected Ph.D. fire ecologists shown above and instead accept the effects written by Mr. Almack that contradict the scientists' findings.	and altered by the different choices made in road management during the high-powered rifle season.
1.35	Congressional Research Service Report **"Forest Fire/Wildfire Protection"** February 14, 2005 http://www.coloradofirecamp.com/congressional_research/forest-fire-wildfire-effects.htm	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views.
1.36	Campbell, John L. Ph.D, Dan C. Donato, Joe B. Fontaine J. Boone Kauffman Ph.D., Beverly E. Law Ph.D., and Doug Robinson "Biscuit Fire Study." Oregon State University Department of Forest Science Terrestrial Ecosystem Research and Regional Analysis. 2003. http://zircote.forestry.oregonstate.edu/terra/biscuit.htm	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views.
1.37	Hanson, Chad Ph.D. February 2, 2010 "New Report Debunks Myth of 'Catastrophic Wildfire' " http://johnmuirproject.org/documents/Myth%20of%20Catastrophic%20Wildfire%20Media%20Release.pdf	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views.
1.38	Nappi, Antoine Ph.D., Pierre Drapeau Ph.D., Jean-François Giroux Ph.D. and Jean-Pierre Savard Ph.D. "Snag use by foraging black-backed woodpeckers (Picoides articus) in a recently burned eastern boreal forest." The Auk 120(2): 505-511. 2003. http://www.borealcanada.ca/research_arc_hot_e.cfm	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views.

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1.39	**Concluding statements about the tragic, untrue natural resources effects analysis disclosures cooked-up by 2 IDT members.** After reading chapter3, I don't know whether to laugh or cry. I know some IDT members were all striving to be "team players" by portraying the No Action alternative as a dreadful, ill-advised, appalling, ghastly action. They didn't anticipate there would be members of the public reading Chapter 3 who have a basic understanding of fire ecology and the intelligence to compare the IDT effects disclosures above with the research conclusions if independent scientists not connected with the USDA. **Mr. Almack and Mr. Eichman have been listening to and swallowing USFS mythology about how logging and fire interact. It's sad that they didn't have the initiative and curiosity to examine real science conclusions resulting from the research done by independent scientists with no connection to the USDA.** **<u>Request for changes to be made to the final NEPA document:</u>** Provide independent science validating Mr. Almack's and Mr. Eichman's claims that logging reduces fire effects or remove the IDT's claims that logging prevents fire from Chapter 3. Also, include the No Action effects for Rocky Mountain Elk.	Relevant research has been reviewed and cited, local scientific data and knowledge, and analysis are all used to support the conclusions discussed in Chapter 3 of the FEIS by resource area. The best available scientific information has been used, including relevant information provided in comments by members of the public. The analysis for Rocky Mountain Elk does not look at modeled habitat like the other species, but rather looks at Security Areas, based on the various road treatments. As such, the analysis section is set up differently than other species. The No Action effects for Rocky Mountain Elk are described through the description of the current condition. A clarifying sentence has been added to guide readers to this analysis for the current condition. The No Action alternative for elk was missing from the DEIS. It is included in the FEIS. The discussion identifies that under Alternative 1, which is Current Condition, the large number of unauthorized routes would remain accessible to illegal use, thereby continuing the degradation of overall elk security in the Project area. The elk analysis deals only with Security Areas, which are created and altered by the different choices made in road management during the high-powered rifle season.
1.40	Failure to do so will violate 40 CFR 1500.2(b) because no evidence is presented for environmental effects conclusions, 40 CFR 1501.2(a) because the environmental effects and values are not identified in detail, and without substantiating evidence for effects conclusions the public cannot determine if they are accurate and based on best science which violates 40 CFR 1500.1(b). The final NEPA document will also violate 40 CFR 1500.1(b) because the Chapter 3 environmental effects section written by IDT members is contrary to the "best science" statements written by hundreds of well-respected, independent scientists in the **<u>Opposing Views Attachments</u>**. With this being the case, the agency effects	Relevant research has been reviewed and cited, local scientific data and knowledge, and analysis are all used to support the conclusions discussed in Chapter 3 of the FEIS by resource area. The best available scientific information has been used, including relevant information provided in comments by members of the public. The No Action alternative for elk was missing from the DEIS. It is included in the FEIS. The discussion identifies that under Alternative 1, which is Current Condition, the large number of unauthorized routes would remain accessible to illegal use, thereby continuing the degradation of overall elk security in the Project area. The elk analysis deals only with Security Areas, which are created

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	disclosures are not "high quality" and an "accurate scientific analysis."	and altered by the different choices made in road management during the high-powered rifle season.
1.41	**<u>Issue #9</u> ----- The DEIS fails to describe the effects to scenic/visual resources, cultural and archaeological resources, air quality and climate change in Chapter 3.** **<u>Comment:</u>** Without exception, EAs and EISs for timber sales written on other national forests contain effects write-ups in Chapter 3 addressing how or whether the timber sale will affect scenery, cultural and archaeological resources, air quality and climate change. In spite of the fact this timber sale "could" or "may" affect these important resources, the predicted effects to these resources from selecting No Action and Action Alternatives 2, 3 and 4 are not disclosed in Chapter 3. Instead, they are briefly discussed in a section called "Other Concerns Evaluated" on pages 27-31. Why is the Payette NF excluded from the law. Why do the other 154 national forests comply with the law? Supervisor Lannom, how will you respond to these questions when the plaintiff's attorney asks you. **<u>Request for changes to be made to the final NEPA document:</u>** Include discussions, information and data in Chapter 3 showing the effects to scenery, cultural and archaeological resources, air quality and climate change that will result from activities associated with each of the 4 alternatives. If you feel they will not be affected, please describe why.	Effects to scenic/visual resources, cultural and archaeological resources, air quality, and climate change have all been covered in the FEIS (Section 1.12), as noted by Mr. Artley, in a section titled “Other Concerns Evaluated”. As discussed in the FEIS resources covered in this section do not drive alternatives, reply to issues, or experience any significant effects due to the action alternatives. The full text of the Specialist Reports are available upon request.
1.42	**<u>Issue #10</u> ----- The DEIS does not discuss how the timber sale's logging and slash/RX burning activities will be mitigated to assure protected bird species' individuals and their habitat are not harmed in any way.** It is not only possible but highly likely that that logging and slash/RX burning will:	A list of birds protected by the Migratory Bird Act found in the Project Area is listed in the Wildlife Specialist Report. Mitigation measures will be used to minimize impacts to birds protected by the Migratory Bird Act.

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	"harm the birds with logging-related pollution", "detrimentally alter the bird's habitat", "environmentaly degrade the area surrounding the bird's habitat", and "kill bird chicks by destroying their nests or eggs". Note: The 4 quotes above come directly from the Act. **<u>Request for changes to be made to the final NEPA document:</u>** Identify the birds that exist in and near the project area that are protected under the Migratory Bird Treaty Act and discuss how these birds will be protected during burning and timber harvest operations. The Act makes no allowance to consciously harm these birds for any reason.	
1.43	**<u>Issue #11</u> ----- Supervisor Lannom, please take additional action to further reduce the risk to people's homes and the lives of family members in the WUI should a wildfire start nearby.** The DEIS at page 58 indicated there are homes in the WUI that are at risk. Before Dr. Jack Cohen retired, he was a fire physicist who worked for the USFS doing research to determine the best action to reduce damage to homes in the WUI if a wildfire starts nearby. His research was done at the Forest Service's Missoula Fire Sciences Laboratory at the Rocky Mountain Research Station. His fine fuels removal methods are implemented in foreign countries. They are the most effective fire damage risk reduction methods available. For more than 15 years, the National Fire Protection Association's (NFPA) wildfire safety recommendations have been shaped by Dr. Cohens fire science. The resulting Firewise Communities Program provides guidance for homeowners on the WUI to help them prepare their homes to resist wildfire. Some homeowners in the WUI might already be familiar with Firewise and applied its methods to their property. Other homeowners may not know about Firewise and/or are unable to physically treat their property. Some homeowners in the WUI may have already removed fine fuels within several hundred feet of their homes using the Firewise instructions. Some homeowners have not because they are either unaware of	The Forest Service is tasked with preventing the movement of wildfires from the wildlands into the WUI area, out of the WUI area into the wildlands, and improving efficiency of wildfire suppression in WUI situations. Firewise is a County program. The Forest agrees with the concepts of Firewise communities and many members of our staff are actively involved in the program. The USFS has no jurisdiction to do fuels reduction on private property, however, treatments proposed in the action alternatives could reduce the risk to adjacent landowners by reducing the potential for rapid fire spread on treated USFS lands.

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	Firewise or they are physically unable to do the work. This is where the USFS should enter the picture.	
1.44	Here is the Firewise information: Link to Recommendations from the Firewise Communities Program: http://www.firewise.org/wildfire-preparedness/be-firewise/home-and-landscape/defensible-space.aspx?sso=0 Link to Firewise principles: http://www.firewise.org/wildfire-preparedness/be-firewise/home-and-landscape.aspx?sso=0 Link to the Firewise web site: http://www.nfpa.org/safety-information/for-consumers/outdoors/wildland-fires	These articles are about defensible space around homes; tips and tools to make your home and neighborhood safer from wildland fire; and ways homeowners can make their homes safer from wildfire. These articles do not directly pertain to this project because the objective of this project is not to provide structure protection for private residents but to effectively treat National forest lands, specifically reducing the wildfire hazard within the wildland-urban interface.
1.45	**Reducing the Wildland Fire Threat to Homes: Where and How Much?** Presented as the Fire Economics Symposium in San Diego, California on April 12, 1999. http://www.fs.fed.us/rm/pubs_other/rmrs_1999_cohen_j001.pdf	Finney and Cohen (2003) discussed the success of fuel management treatments for the purposes of benefiting wildland values in addition to increasing home survivability. Concepts from both papers were used broadly in the fuels report, although neither is cited Finney, M., and J. Cohen. 2003. Expectation and Evaluation of Fuel management Objectives. p. 353-366. In: Omi, P.N., and J.A. Linda, tech. eds. 2003. Fire, fuel treatments, and ecological restoration: Conference proceedings; 2002. 16-18 April; Ft. Collins, CO. Proceedings RMRS-P-29. USDA, Forest Service, RMRS. 475p. The Forest Service is tasked with preventing the movement of wildfires from the wildlands into the WUI area, out of the WUI area into the wildlands, and improving efficiency of wildfire suppression in WUI situations. The Forest is working with the county fire mitigation group. [Except for the last sentence this is a duplicate response and all should be combined.]
1.46	**Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States** Published in Forest Ecology and Management 256, 2008 http://www.firewise.org/Information/Research-and-Guidance/WUI-Home-Ignition-Research/~/media/Firewise/Files/Pdfs/Research/CohenFuelTreatment.pdf	This document discusses long term fuel planning to create conditions in which fire can occur without devastating consequences. It also identifies the Federal agency dilemma that the home ignition zone largely occurs on private lands and most land management agencies do not have the authority to mitigate the WUI ignition potential directly, so are forced to take indirect routes.

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1.47	Here is a link to all 13 publications authored by Dr. Cohen describing the overwhelming effectiveness of using his fine fuels removal methods near homes to reduce the risk that they might burn. Link: http://firewise.org/wildfire-preparedness/wui-home-ignition-research/the-jack-cohen-files.aspx?sso=0	These documents address the concepts of structure protection for landowners. These papers discuss concepts such as: • It is not reasonable to form agency and public expectations for the non-occurrence of wildland fires, including wildland fires encroaching on communities. • Structure ignition and determining suitable clearing distances around structures to prevent ignition from radiant heat. • Ignitability of structures within the WUI areas and the Structure Ignition Assessment Model (SIAM). It speaks to areas immediately adjacent to homes and residential fire resistance; not the surrounding areas which make up the WUI. • The need to reduce forest fuels if structures do not have adequate fuel breaks around them, which makes them susceptible to firebrand ignition. • Home survivability in the wildland-urban interface. Finney and Cohen (2003) discussed the success of fuel management treatments for the purposes of benefiting wildland values in addition to increasing home survivability. • Suppressing wildfire among numerous highly flammable houses was too much for typical wildland firefighting personal to handle. • Opportunities to regulate house construction or subdivision layout through planning and zoning regulations to improve the home ignition zone around structures. Concepts from both papers were used broadly in the fuels report as it is recognized that public safety and structure protection are highest priority. The Forest Service does not have the authority to regulate home construction or conduct fuels reduction on private property. Managing fuels to reduce wildfire hazard in the WUI is one of the objectives of the High Valley project.
1.48	**Western National Forests: A Cohesive Strategy is Needed to Address Catastrophic Wildfire Threats** Published by the Government Accounting Office, GAO/RCED-99-65 Link: http://www.gao.gov/archive/1999/rc99065.pdf	Report to the Subcommittee on Forest and Forest Health, Committee on Resources, House of Representatives on the need for a cohesive strategy on catastrophic wildfire threats. Scientists and agency officials attribute this (on the dry eastside forests) to long periods of fire suppression resulting in denser forests, shifts in tree species composition, and increases in insects and disease.
1.49	University of California; SNEP Science Team and Special Consultants **Sierra Nevada Ecosystem Project: Final Report to Congress**	Article about fires in the Sierra Nevada's, the diaries of early explorers detailing the open vs dense dark forest and the indiscriminate burning done by sheepherders that would burn anything that would burn.

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	Volume 1, Chapter 4 - Fire and Fuels. http://ceres.ca.gov/snep/pubs/web/PDF/v1_ch04.pdf	One purpose of the High Valley Project is to return the area to a more fire dependent system normally found under historical conditions.
1.50	Government Accounting Office **Western National Forests: A Cohesive Strategy is Needed to Address Catastrophic Wildfire Threats** GAO/RCED-99-65 http://www.gao.gov/archive/1999/rc99065.pdf	Report to the House Subcommittee on Forests and Forest Health from April 1999. The report describes a strategy very similar to the goals of this Project. It describes managing for Historical Range of Variability and promoting mature timber stands in dry Western National Forests through mechanical treatments as a means to reduce catastrophic wildfire.
1.51	**Request for changes to be made to the final NEPA document:** Modify the Proposed Action to do the following in addition to hazardous fuels removal: * distribute Firewise handouts to WUI residents describing the fine fuels removal methods (where and how). * contact the people living in the WUI and announce Firewise workshops will be held to answer questions. * offer to remove the fine fuels (with written permission) on private property owned by elderly and disabled homeowners who cannot do the work themselves. * modify the P&N to reflect what should be the prime goal of this timber sale: reduce the chance that homes will burn in the WUI should a wildfire start in the area. Fuels reduction would then be an alternative, but this would open the door to the 3 actions shown above.	The Forest is working with the County Fire Mitigation program on public education and other mitigation issues. Opposing Views Attachment #11: A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views.
1.52	**Issue #12 ----- The American people do not want their national forests logged and roaded up. The money for your salary (and the IDT members' salary) comes from tax dollars supplied by these same Americans you propose to backhand by ignoring and rejecting their desires and wishes for their precious public land. Do you enjoy serving your corporate masters first?** The American citizens are your supervisors. In America, when an employee consciously and willfully disobeys his/her supervisor on a regular basis they are terminated. Here are the statistics you ignore. In 2002, 7,069 Americans were randomly selected in the lower 48 states to respond to the statistically significant Values, Objectives and Beliefs survey sanctioned by Chief Thomas. Chief Thomas spent	Consideration of the social aspects related to timber harvest in concert with utilizing the best available science was accomplished with the Middle Fork Weiser Landscape Restoration Project, through the design of alternatives, different silvicultural treatments, assessment of effects, and determination of mitigation measures. The Forest also worked closely with the Payette Forest Coalition, a local collaborative group representing a wide range of interest groups and individuals.

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	the American public's money on the survey because he believed it would guide future agency management decisions. Chief Thomas didn't anticipate future USFS line-officers would be clinically obsessed by volume accumulation as is the case here. Link to survey: http://www.fs.fed.us/rm/pubs/rmrs_gtr095.pdf	
1.53	2000 USDA Forest Service RPA Assessment. Gen. Tech. Rep. RMRS-GTR-95. Fort Collins CO. USDA. Forest Service. Rocky Mountain Research Stations.	The Government Performance and Results Act (Public Law 103-63) requires that each Federal agency submit to Congress a five-year Strategic Plan. The Plan is to include long-term goals and objectives. Identifying the long-term goals and objectives is one of the most critical aspects of Strategic Planning. The Results Act requires an agency to ask for the views and suggestions of anyone "potentially affected by or interested in" it's Strategic Plan. This GTR is a summary of that public sensing.
	Comment: Of the 7,069 Americans surveyed in Chief Thomas's values survey in 2002, 88.4% supported elimination of timber harvest and mining, and instead prefer the agency employees to spend their tax dollars on protecting watersheds from harm and less consumptive services. They wanted national forest management to be based on science rather than money. This percentage has increased in the 13 years since the survey. What's so special about the Middle Fk Weiser timber sale that would make these 88.4% of Americans embrace the logging?	Comment noted.
	Comment: Why do accept the recommendations supplied by a handful of timber IDT members financially motivated to enable and facilitate timber sales regardless of resource impacts, when it is the antithesis of best science described in the **Opposing Views Attachments**?	Comment noted.
1.54	**MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES THE WHITE HOUSE** Office of the Press Secretary, March 9, 2009 http://www.whitehouse.gov/the-press-office/memorandum-heads-executive-departments-and-agencies-3-9-09	The analyses completed in the specialist reports take into consideration, and make conclusions based on, research, science, reports, models, monitoring and site-specific information as it was available, in conjunction with scientific recommendations regarding the management of, and effects of, the project activities on the relevant resource. The MFWR Project documents a full environmental review informed by science.

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1.55	**Improving Regulation and Regulatory Review** Executive Order 13563 of January 18, 2011 Published in: the Federal Register, Vol. 76, No. 14 Friday, January 21, 2011 http://www.gpo.gov/fdsys/pkg/FR-2011-01-21/pdf/2011-1385.pdf	See response to 1.54 above.
1.56	The Middle Fk Weiser timber sale area contains streams that have year round resident fish. Federal agencies are required by law to use best available science as a basis for their decisions: "(2) Conservation and management measures shall be based upon the best scientific information available." Source: **16 U.S.C. § 1851 : US Code - Section 1851: National standards for fishery conservation and management.** http://codes.lp.findlaw.com/uscode/16/38/IV/1851	The most recent information available, including the Payette National Forest Fisheries Information Database, BURP surveys, and the Bull Trout Recovery Plan, etc. was used to complete the fisheries analysis. Note that four of Mr. Artley's comments found following this citation are omitted in this table. They concern questions about the validity of logging on National Forests and are national in scope, therefore outside the scope of this project. Interested readers can find these comments in the full text of Mr. Artley's comments found on the Project website. http://data.ecosystem-management.org/nepaweb/nepa_project_exp.php?project=41687
1.57	**Opposing Views Attachments #1, #4, and #15**	Opposing Views Attachment #4: A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views. Attachment #1 and #15 were not provided with comment.
1.58	**Comment:** You know there is no "timber famine" as the USFS has been so fond of predicting for many decades. There is no shortage of raw materials for paper and wood products in the United States. Therefore, there is no reason to have commercial timber sales in the national forests. Only 4.8 % of the raw materials for domestically used wood products and paper come from national forest land. The USFS could stop logging today and the market would never react. The volume would be replaced from private-industrial tree farms and private sources without blinking an eye.	Outside of the scope of the Project.
1.59	**Issue #13 ----- Please post your responses to public comments online as well as maintaining a hardcopy in the Project File.**	Public comment letters received during the DEIS public comment period are posted on the Project website at http://www.fs.usda.gov/project/?project=41687. The Agency Response to

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	Comment: Members of the public who submit comments on a draft NEPA document make the effort to read the NEPA document closely and take the time to compose comments that reflect their issues. Unless you respond to these comments and allow the public to read your responses they don't know if their comments were read and "considered." Plus, such responses show you aren't ignoring the public. **<u>Request for changes to be made to the final NEPA document:</u>** Post your responses to ALL public comments online so the 322 million Americans\ national forest owners might read them if they choose.	comments can be found in Appendix 9 - Response to Comments. This Appendix.
1.60	**<u>Issue #16</u> ---- Increases in National forest logging do not stabilize or enhance the economy of small communities located near them.** One of your purposes listed in the P&N at page 19 for this timber sale is: **"4) Contribute to the economic vitality of the communities adjacent to the Payette National Forest."** Once again this is a cut & paste get-out the cut P&N statement you will find in the P&Ns for your past timber sale draft EAs and DEISs. Request for changes to be made to the final NEPA document: Either: 1) remove the following statement from the P&N: "4) Contribute to the economic vitality of the communities adjacent to the Payette National Forest." OR 2) offer the sale as an SBA sale and say so in the final NEPA document, OR 3) include the text or links to the text of the following papers (referenced above) in an Appendix to the NEPA document. Line-officers must not withhold such important information from the public. Congress promulgated laws to prevent zealous federal officials from behaving in such a manner to feather their nest. "The Economic Impact of Trails-Forest Recreation's Growing Impact"	Comment noted. Timber harvest, fuels reduction, ecological restoration, recreation, providing for clean air and water are all part of the multiple-use mandate of the Forest Service. The MFWR project is designed to meet multiple objectives

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	"Seeing Forests for their Green: Economic Benefits of Forest Protection, Recreation, and Restoration", "The Economic Impact of Preserving Washington's Roadless National Forests" A 1998 presentation to the National Trails Training Partnership by U.S. Undersecretary of Agriculture Jim Lyons	
1.61	*"The Economic Impact of Preserving Washington's Roadless National Forests"* by Thomas Michael Power, Ph.D., Professor of Economics, University of Montana, June 13, 2000. Links to complete article: http://www.kettlerange.org/power/ExecSummary.htm http://www.kettlerange.org/power/powerreport.htm	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.62	EcoNorthwest, "Seeing Forests for their Green: Economic Benefits of Forest Protection, Recreation, and Restoration", August 13, 2000 http://econw.com/our-work/publications/seeing-forests-for-their-green-economic-benefits-of-forest-protection-recre/	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.63	A 1998 presentation to the National Trails Training Partnership by U.S. Undersecretary of Agriculture Jim Lyons' statements quoting figures from the draft RPA (Resources Planning Act) of 1995. http://www.americantrails.org/resources/economics/EconForestRec.html	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views National forests are managed for multiple uses that contribute to economic activity in nearby communities, including timber, recreation, mining, watershed services, and fish and wildlife. This project is consistent with multiple use management and proposes harvesting of commercial forest products, recreation improvements, restoration activities, and road work. The potential for some management actions to affect recreational use and site quality are addressed in the economic analysis. The analysis of the proposed action notes that: "Although treatments will likely create noise, dust, and smoke, which may negatively affect the short term quality of recreational experiences during the project treatment days, proposed treatments are not anticipated to affect overall forest visitation. As section 4.6 of the NVUM surveys for the forests

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		demonstrate, when individuals are unable to visit their preferred site, most will engage in substitute behavior that will continue to have an effect in the local economy (USDA Forest Service 2011a, b). As a result, treatments considered under Alternative 2 are not expected to measurably reduce the economic contributions of recreation within the study area. However, Alternative 2 does propose to upgrade two camp sites, as well as make trail improvements to increase the quality of recreational experiences supported by the Project area, and will likely result in higher nonmarket values associated with Project area lands. The construction of new and improvements to existing recreation related facilities will also generate new work for private contracting. The creation improvements included in this alternative would support a portion of 1 job and approximately $3,000 in labor income in the local economy on annual average over the life of the project" (FEIS Section 3.12).
1.64	Also see this compelling information: http://illinois.sierraclub.org/piasapalisades/factshee.htm	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views.
1.65	Logging expansion won't help rural communities *Portland Oregonian* online, June 29, 2014 http://www.oregonlive.com/opinion/index.ssf/2014/06/logging_expansion_wont_help_ru.html	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.66	**Comment:** Why do you reject the findings and conclusions of Undersecretary of Agriculture Jim Lyons who states "recreation revenues from national forests significantly exceed timber revenues." Elsewhere in these comments are the results of public survey information indicating the public is less likely to recreate near areas that have been logged, thus logging diminishes recreation revenue. Since recreationists avoid areas that have been logged the many "ma and pa" businesses that depend on recreation are harmed. How do you justify harming the revenues of motels, gas stations, restaurants etc. to increase the profits of a very large corporation? Please describe why Undersecretary Lyons' conclusions about community stability do not apply to the Payette National Forest.	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views See response to 1.63 above.

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1.67	**Comment:** You reject the research conclusions of 241 Ph.D. scientists quoted in **Opposing Views Attachment #1** who demonstrate how logging-related harm (and in a few cases destruction) is inflicted on multiple natural resources in and near the sale area. Incredibly, you rely on the advice of 3 or 4 timber employees financially motivated to sell timber. You know the log for community stability P&N statement appears in at least 80% of all timber sale NEPA documents. This has become the commonly used excuse by USFS line-officers to sell unneeded timber sales and you use it here.	Contributing to the economic vitality of the communities adjacent to the Payette National Forest is part of the purpose of the project. The economic effects of the project are disclosed in Section 3.12 of the FEIS.
1.68	**Comment:** If you were really concerned about local community stability and local job creation you would offer this sale as an SBA sale to prevent a large timber corporation from logging it using their own labor. This would prevent the logs from being hauled many miles to be processed at a mill far removed from the small communities you claim need economic help. Of course your motivation to sell this timber sale has nothing to do with community stability. We both know "local community stability" and "local job creation" is part of the USFS dishonest script to trick the public into accepting tragic timber sales. **Request for changes to be made to the final NEPA document:** Either: 1) remove the following statement from the P&N: **"4) Contribute to the economic vitality of the communities adjacent to the Payette National Forest."** **OR** 2) offer the sale as an SBA sale and say so in the final NEPA document, **OR** 3) include the text or links to the text of the following papers (referenced above) in an Appendix to the NEPA document. Line-officers must not withhold such important information from the public. Congress promulgated laws to prevent zealous federal officials from behaving in such a manner to feather their nest. *"The Economic Impact of Trails-Forest Recreation's Growing Inpact"*	It is mandatory for all contracts/timber sales to be assessed for SBA by the Contracting Officers. Stewardships are excluded, as approved by the Washington Office, since local mills do not qualify as a small business. Stewardships have been primarily used in our restoration projects since they have multiple objectives such as road decommissioning, aquatic organism passage installation, non-commercial thinning, and etc. All of the stewardships, thus far, were purchased by the local mills which are not considered a small business, the mills then hired local subcontractors/loggers. Additionally, traditional Timber Sale contracts will be considered when implementing the MFWR project.

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	"Seeing Forests for their Green: Economic Benefits of Forest Protection, Recreation, and Restoration", *"The Economic Impact of Preserving Washington's Roadless National Forests"* A 1998 presentation to the National Trails Training Partnership by U.S. Undersecretary of Agriculture Jim Lyons	
1.69	**<u>Issue #21</u> ----- Supervisor Lannom, if you care about maintaining aquatic species' health you would indicate in the final EIS that all newly constructed temporary roads will be obliterated after use by returning the ground to the natural angle of repose and eliminate the running surface**	Per the project design requirements, all temporary roads will be recontoured upon completion of activities. For more information, please refer to the project design feature table in FEIS Chapter 2.
1.70	**<u>Comment:</u>** Roads that will be used again in the future must be constructed to system road standards with surfacing and a ditch to reduce sediment generation. If the final EIS does not clearly indicate that your proposed temporary roads will be obliterated such that a running surface no longer exists, it will show you plan to allow these temporary roads to pump sediment for decades until the so-called temporary road is used again for the next timber sale. Please become familiar with the Clean Water Act.	Road maintenance on system roads occurs on a regular basis and will occur with this project on system roads that are to be used for management activities; project design features specific to this project include implementing best management practices (BMPs) for road use, reconstruction, and culvert replacement in order to ensure compliance with the Clean Water Act (FEIS Table 2.4-3). All temporary roads (including newly constructed and unauthorized roads used as temporary roads) will be obliterated after use (FEIS Chapter 2).
1.71	**<u>Comment:</u>** You propose to decommission 80.7 miles of existing road to reduce sediment generation that might enter streams. As part of the timber sale you propose to construct 9.7 miles of new road you refer to as "temporary road" that will generate new sediment. Reconstructing 34.8 miles of unauthorized road will also generate sediment. New roads produce 3 to 5 times more sediment than an existing road produces. There is no sediment analysis. How does the public know if the net sediment is reduced?	Road-related sediment production was modeled and analyzed in the watershed section of the FEIS and in the watershed specialist report. Forest Plan standard SWST04 requires a long-term benefit to watershed conditions with management actions that may produce sediment over the short term. Proposed road decommissioning will achieve a long-term benefit. Temporary roads will be fully recontoured within three years of use (the temporary time frame defined by the Forest Plan). Please see Table 3.5-8 in the watershed section of Chapter 3 of the FEIS for results of sediment analysis reflecting the benefit of road decommissioning over the long term.
1.72	**<u>Comment:</u>** At page 63 you indicate temporary roads will be decommissioned after use. You tell the public: "Decommissioning treatments proposed range from full recontour to "spot treating" isolated areas." You invite massive sediment production yet your	There is the potential for sediment production during road decommissioning activities, but research and monitoring shows that decommissioned roads stabilize over the short term to provide a long term benefit to the watershed. This is discussed in the watershed section of Chapter 3 of the FEIS. Temporary roads will be fully recontoured, as described in the project design features in

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	P&N isetifies the need for riparian treatment. Who's in charge on the Payette NF?	Chapter 2 of the FEIS, Table 2.4-3. Other decommissioning treatments may be more appropriate for roads not disturbed by project activities (not used as temporary roads); these treatments are described in Chapter 2 of the FEIS as well.
1.73	**Comment:** Since temporary roads are outsloped with no ditch, sediment that is generated during precipitation events, finds its way to streams and harms the aquatic resources after initial construction … unless the road is really obliterated which you aren't proposing to do. You know roads that are really obliterated have the fill returned to the cut so the original sideslope existed before the temp road was constructed. Your proposal to decommission your temporary roads will leave the road surface in place so you can access the cutting units with less reconstruction costs the next time you log the area. Your so-called temporary roads are not temporary. You know this and choose to hide it from the public.	All temporary roads will be obliterated after use. Please see Chapter 2 of the FEIS, specifically the project design feature tables, for a description of temporary road treatment following use.
1.74	**Temporary roads are temporary (emphasis added). They must all 1) be returned to the original angle of repose (full recontour), and 2) have the CMPs removed after use. There is no type of future use that would justify keeping a temporary road running surface intact. If future access is needed a system road should be built.**	Roads identified for obliteration, including unauthorized roads used as temporary roads as well as those being obliterated for soil and water restoration, will be would be decompacted to the depth of compaction, recontoured, and blended with the surrounding terrain. See Table 2.4-3 for Project Design Features for Soil, Water, Riparian, and Aquatic Resources. All temporary roads will be obliterated after use. BMPs will be used for temporary road obliteration as referenced in Table 2.3-2. National BMPs will also be used and are referenced in the Watershed Resources section (3.5). We have and will continue to do annual monitoring of decommissioned roads. Past monitoring has shown recovery after decommissioning activities. GRAIP monitoring shows little to no sediment leaving road prism even a year after obliteration.
1.75	**"AN EXPLANATION AND ASSESSMENT OF ROAD REMOVAL IN VARIED HABITATS"** By Bethanie Walder and Scott Bagley Published by the Wildlands Center for Preventing Roads, Missoula, MT Link: http://ntl.bts.gov/DOCS/ICOWET_III/icowet3paper.pdf	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views

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1.76	**"Road Obliteration: Benefits to the Watershed and Its Inhabitants"** A Swan View Coalition publication by Keith Hammer, 1994 Link: http://www.swanview.org/home/articles/reports-documents/road_obliteration_benefits_to_the_watershed_and_its_inhabitants/56	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.77	November 5, 2008, letter to Bruce Ramsey, Forest Supervisor, Beaverhead-Deerlodge National Forest written by John F. Wardell, Director, EPA Montana Office. Link: http://yosemite.epa.gov/oeca/webeis.nsf/(PDFView)/20080402/$file/20080402.PDF?OpenElement	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.78	A Guide for Road Closure and Obliteration in the Forest Service link http://www.fs.fed.us/eng/pubs/pdfimage/96771205.pdf At page 20	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.79	http://www.parks.ca.gov/pages/23071/files/fullroadrecontourbmp5_03.pdf	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.80	http://www.epa.gov/wastes/conserve/tools/greenscapes/pubs/compost-uw.pdf	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.81	Since you do not propose to "recontour the site to match the surrounding natural terrain" you are not obliterating your temp roads. EPA says "Road closure and obliteration is one of the most important methods used to improve and protect watersheds within the National Forests of the Pacific Northwest." Clearly, you are not interested in "improving and protecting watersheds."	Please see the project design feature table in Chapter 2 of the FEIS. Temporary roads will be recontoured; the project design feature does in fact refer to recontouring specifically and "blend(ing) with the surrounding terrain".
1.82	Here are links to other sources clearly showing the superiority of road obliteration: http://www.swanview.org/home/articles/reports-documents/road_obliteration_benefits_to_the_watershed_and_its_inhabitants/56 http://www.parks.ca.gov/pages/939/files/Full%20Road%20Recontour.pdf	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views

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1.83	**"Road Decommisioning"** by Carolyn Napper, USFS Soils Scientist A USDA Forest Service Technology and Development paper Link to paper: http://www.fs.fed.us/t-d/programs/im/road_decomission/road_decommissioning.shtml	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views.
1.84	**Comment:** You ignore agency best management practices. You have no temporary road monitoring plan. Spending a little money on monitoring is better than spending a lot of money cleaning the stream … or hiding the fact that temporary roads are the reason the stream is muddy. The DEIS does not contain a discussion explaining why you believe temporary road monitoring is not necessary on this project.	See response to 1.74 above.
1.85	Please see **Opposing Views Attachment #4**.	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.86	**Request for changes to be made to the final NEPA document:** Please indicate all temporary roads will be fully recontoured after use and tell the public this will be done in the draft decision document, or provide scientific information authored by independent scientists in the response to comments that indicates there are other methods more effective at long term sediment elimination than full obliteration.	See response to 1.74 above.
1.87	Also, please assure the final NEPA document includes a road obliteration monitoring plan to assure the sediment is being reduced as expected. The resulting draft decision documents should indicate the USFS will provide funding for the monitoring and accomplish the monitoring.	See response to 1.74 above.
1.89	**Issue #22 ----- Please respond to the opposing views contained in the Opposing Views Attachments to these comments.** **Request for changes to be made to the final NEPA document:** Each opposing viewpoint is different and is related to a unique subject, therefore a single response attempting to deal with all opposing views simultaneously does not respond to opposing views as required by law. Please respond to each opposing view and post the	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views. They are also available on the Project Website. http://data.ecosystem-management.org/nepaweb/nepa_project_exp.php?project=41687

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	responses online for the public to see. Simply placing a hardcopy of your opposing views responses in the project file located at the district hides the information from the American public. How will the judge react when he/she finds out you expected the public to drive thousands of miles to examine a document that legally must be available to the public? Failure to do so will violate 40 C.F.R. § 1502.9(a) and 1502.9(b) and. 42 USC § 4372(d)(4) because "Final environmental impact statements shall respond to comments as required in part 1503 of this chapter. The agency shall discuss at appropriate points in the final statement any responsible opposing view which was not adequately discussed in the draft statement and shall indicate the agency's response to the issues raised." Failure to respond to responsible opposing views (from any source) also is inconsistent with court precedent:	
1.90	Not responding to responsible opposing views is also inconsistent with court precedent: In Center for Biological Diversity v. United States Forest Service, Argued and Submitted July 15, 2003, In the United States Court of Appeals, Ninth Circuit, the court stated: "Accordingly, we find that the Final EIS fails to disclose and discuss responsible opposing scientific viewpoints in the final statement itself in violation of NEPA and the implementing regulations. We therefore reverse the district court's grant of summary judgment and remand to the district court with directions that it remand the final statement to the Forest Service for further proceedings consistent with this opinion." In Sierra Club v. Eubanks 335 F. Supp. 2d 1070 (ED Cal. 2004), the court stated: "credible scientific evidence that [contradicts] a proposed action must also be evaluated and considered." In Seattle Audubon Society v. Lyons 871 F. Supp. 1291, 1318 (W.D. Wash. 1994), the court stated: "[the EIS] must also disclose responsible scientific opinion in opposition to the proposed action, and make a good faith, reasoned response to it." In Seattle Audubon Society v. Moseley 798 F. Supp. 1473 (WD Wash. 1992), the court stated: "[t]he agency's explanation is insufficient under NEPA … not because	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views The Forest Service has reviewed and considered the Opposing Views viewpoints provided through the public involvement on this project. All documents referenced in this attachment, unless otherwise noted, are contained in the Project record.

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	experts disagree, but because the FEIS lacks reasoned discussion of major scientific objections." In Sierra Club v. Bosworth 199 F.Supp.2d 971, 980 (N.D. Cal. 2002), the Court held that the Forest Service violated NEPA when it failed to: "disclose and analyze scientific opinion in support of and in opposition to the conclusion that the…project will reduce the intensity of future wildfires in the project area."	
1.91	**Issue #24 ----- The Proposed Action will clearly cause the resource degradation and destruction described in the ATTACHMENTS to these comments.** The attachments to these comments present the "responsible" opposing views of between 500 and 600 independent, unbiased Ph.D. biological scientists who describe the resource damage caused by commercial timber sale logging and road construction activities that occur at any location, on any topography, at any elevation, at any time logging takes place. **Comment:** The Middle Fk Weiser timber sale will cause major damage to non-vegetative natural resources described by experts in the **Opposing Viewpoint Attachments**. Forging ahead with the timber sale with full knowledge of the likely resource damage that the sale will cause indicates 1) weighing the relative value of the natural resources in the area against timber outputs has not been done, and 2) they have not been "harmoniously coordinated." Also, since outdoor recreation, watershed, wildlife and fish are adversely affected by the sale, you obviously consider timber more important that these 4 other resources. **Request for changes to be made to the final NEPA document:** Include the source literature for particularly relevant science quotes contained in the **Opposing Viewpoint Attachments** in the References section of the final EIS and cite the quotes contained in the attachments in the body of the final EIS. Indeed, it makes sense for a public servant to present the public with the whole story which includes benefits and drawbacks of project implementation.	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views

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1.92	Rejecting valid science because it's at odds with USFS timber agenda is also inconsistent with court precedent: Sierra Club v. Eubanks 335 F. Supp. 2d 1070 (ED Cal. 2004) Opinion excerpt: "credible scientific evidence that [contradicts] a proposed action must also be evaluated and considered." Seattle Audubon Society v. Lyons 871 F. Supp. 1291, 1318 (W.D. Wash. 1994) Opinion excerpt: "[the EIS] must also disclose responsible scientific opinion in opposition to the proposed action, and make a good faith, reasoned response to it." Seattle Audubon Society v. Moseley 798 F. Supp. 1473 (WD Wash. 1992) Opinion excerpt: "[t]he agency's explanation is insufficient under NEPA … not because experts disagree, but because the FEIS lacks reasoned discussion of major scientific objections." Sierra Club v. Bosworth, 199 F.Supp.2d 971, 980 (N.D. Cal. 2002) Opinion excerpt: The forest service failed to "disclose and analyze scientific opinion in support of and in opposition to the conclusion that the…project will reduce the intensity of future wildfires in the project area."	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.93	**Issue #25 ----- The DEIS does not discuss the items shown below** (e) Energy requirements and conservation potential of various alternatives and mitigation measures. (f) Natural or depletable resource requirements and conservation potential of various alternatives and mitigation measures. (g) Urban quality, historic and cultural resources, and the design of the built environment, including the reuse and conservation potential of various alternatives and mitigation measures. **Request for final NEPA document modifications:** Please comply with the law by including the missing information above. Failure to do so violates 40 CR 1502.16	Both energy requirements and natural or depletable resource requirements their conservation potential of various alternatives and mitigation measures are discussed in the climate change section 1.12.5 of the FIES, the various resource sections in Chapter 3 on irreversible and irretrievable commitments, the project design features, the economic efficiency analysis in section 3.12 of the FIES, and in the discussion of the environmentally friendly alternative in the Record of Decision. Urban Quality does not apply to this Project. Historic and Cultural Resources are addressed in section 1.12.1 of the document. The vault toilets that are proposed to be installed are the only built structures and will comply with Forest Plan guideline FRGU13 – Arcitectural designs should follow principles and concepts outlined in the Built Environment Image Guide (BEIG).
1.94	**Issue #26 ----- You have consciously selected literature for the References section that excludes science describing how logging will adversely affect non-timber natural resources in the sale area.**	Project is not the Stoney timber sale. Out of context. The analysis of references must come from a different DEIS because figures presented do not reflect the DEIS of this Project.

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	Comment: The vast majority of available literature written by independent scientists unaffiliated with the USDA that discusses logging and forest road construction describes the natural resource destruction and adverse effects of these 2 actions. You exclude this science from your References section that describes how logging activities harm (and sometimes destroy) proper natural resource functioning. You select references that support logging and roading because including a representative sample of available logging-related effects science would clearly explain why logging the Stoney timber sale is a mistake. Why am I not surprised that you exclude this independently prepared science and instead include and cite biased documents authored by USFS employees that support logging and road construction? How will the District Court judge rule when the plaintiff's attorneys present these facts? How will you defend your actions? **Comment:** The 42 page References section includes 396 documents. Incredibly, 96 (24%) of these were authored by USFS employees. A word search of the DEIS reveals some of the references not written by USFS employees were not cited in the DEIS. They were included in the Literature Cited section for looks. Since this unprofessional behavior occurs here, why should the public believe what is contained in the DEIS? **Comments:** There are no documents listed in your References section that describe the likely or potential natural resource harm, damage and impairment that might occur by constructing 40 miles of road and logging 30 square miles that are part of the Proposed Action. Yes, when the adverse effects are considered, reconstructing user created roads sometimes produces as much sediment as new construction.	Temporary road construction and use of unauthorized routes as temporary roads will be followed with full recontour decommissioning. By using unauthorized routes that already have a road prism in place the effects will be less than all new temporary road construction and proper decommissioning will follow use. The Vegetation treatments proposed for this Project are divided into categories that manage different stands of trees depending on the desired conditions. The Science referenced in the FEIS was used as a basis for the various treatment types. See References section in Chapter 4 of the FEIS.
1.95	A WEB search of the words TIMBER ADVERSE EFFECTS LOGGING gets 2,330,000 hits. See for yourself: http://www.bing.com/search?q=timber%20adverse%20effects%20logging&qs=n&form=QBRE&pq=timber%20adverse%20effects%20logging&sc=0-23&sp=-1&sk=&cvid=e4548830f3cf4a34a71c3919ee83fa9c	The comment is outside the scope of the project and is non-substantive. However, a web search using those terms had 24,500,000 results. Thank you for your comment.

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1.96	**Federal Register** / Vol. 69, No. 188, page 58056 Wednesday, September 29, 2004 Rules and Regulations http://www.fs.fed.us/r1//projects/plan_rule/intrpretative-rule.pdf	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.97	**Request for changes to be made to the final NEPA document:** Include some source documents from the **Opposing Views Attachments** in the References section of the final EIS. Also, cite some the specific quotes related to the issue that are presented in the source literature in the **Opposing Views Attachments**.	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.98	**Issue #31 ----- After reading this far you must know the proposed Middle Fk Weiser timber sale is not a "restoration" project.** I cannot believe there are still USFS employees who really believe commercial timber sales restore anything but the purchaser's bottom line. (Pg. 11) Long, Richard D., U.S. Department of Agriculture Office of Inspector General **"Western Region Audit Report: Forest Service National Fire Plan Implementation"** *Report No. 08601-26-SF*, November 2001. http://www.usda.gov/oig/webdocs/08601-26-SF.pdf	Thank you for your comment. The purpose and need of the project is disclosed in Chapter 1. Vegetation treatments have been proposed to move the project area toward the desired conditions disclosed in the FEIS. A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.99	Why do you disagree with the OIG by referring to your Middle Fk Weiser timber sale as a restoration project? **Comment:** The following eminent Ph.D. biological scientists, the USDA Office of Inspector General and NOAA fisheries employees conclude commercial logging will significantly damage and even destroy natural resources in the forest. These conclusions are based on research. Supervisor Lannom, here is a small sample of the science you ignored and/or rejected as you planned the Middle Fk Weiser timber sale:	OIG was referencing funding allocation in the document cited by Mr. Artley. The full statement in the OIG document concluded that timber sales with the sole purpose of volume removal do not meet the criteria for restoration; however, those with other land management objectives such wildlife habitat and/or hazardous fuels reduction do. MFWR has multiple management objectives including hazardous fuels reduction, wildlife habitat improvement, improving hydrologic function, and etc. Full quote from OIG document: “We concluded that commercial timber sales do not meet the criteria for forest restoration. According to the FS’ FY 2002 Budget Justification, all costs associated with a timber sale (planning, preparing, and administering) are included in the Forest Products Budget Line Item of the National Forest System appropriation, except when the primary

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		purpose of a timber sale is some other land management objective such as wildlife habitat improvement or hazardous fuels reduction.” Other comment was an opinion of Partridge, Arthur Ph.D., professor emeritus, University of Idaho in support of the Act to Save Americas forests. Additionally, Dr. Partridge further stated that he does support sustainable logging outside of what he deemed sensitive areas. “Remaining functional forest ecosystems, such as roadless areas, ancient forests, riparian zones and other core areas of forest biodiversity would be protected from further logging and roadbuilding. Outside of those areas, limited amounts of sustainable logging are permitted without the needless use of clearcutting, assuring a reasonable supply for the future of timber-dependent communities. ”The “Free Thin/Patch Cut” prescription would incorporate patch cuts with reserves. Patch cuts are defined by Helms (1998) as clearcuts where “cutting may be done in groups or patches (group or patch clearcutting)”. Not the entire stand would be regenerated as disclosed in Chapter 2 of the FEIS. Shelterwoods are defined by Helms (1998) as disclosed in the FEIS, “the cutting of most trees, leaving those needed to produce sufficient shade to produce a new age class in a moderated microenvironment…”Both the proposed regeneration treatments (shelterwoods and patch cuts) are designed to retain reserve trees to meet wildlife, visual, soils and vegetation management objectives. Reserve trees are defined by Helms (1998) as “a tree, pole-sized or larger, retained in either a dispersed or aggregated manner after the regeneration period under the clearcutting, seed tree, shelterwood, group selection, or coppice methods” Management Requirements and Project Design Features are identified in Chapter 2 and effects to the listed resources are disclosed in Chapter 3.While some of the alternatives do propose regeneration of early seral tree species, which requires sunlight to reach the forest floor to be successful, the proposed regeneration methods have been designed to retain canopy layers, structure and biological legacies that do not meet the intent or definition of a clearcut.
1.100	**Pacific Salmonids: Major Threats and Impacts** Published by NOAA fisheries Office of Protecte Resources, May 15, 2014	Appendix B of the Forest Plan was used to analyze effects from the proposed activities on fish habitat. The fisheries section of the FEIS outlines the expected effects to Watershed Condition Indicators including temperature,

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	http://www.nmfs.noaa.gov/pr/species/fish/salmon.html	sediment/turbidity, LWD and RCAs. A biological assessment for potential effects of the Middle Fork Weiser River Project on bull trout and their critical habitat is in progress and will be submitted to the Fish and Wildlife Service to complete ESA consultation.
1.101	Partridge, Arthur Ph.D., professor emeritus, University of Idaho Statement at a Press Conference with Senator Robert Torricelli about S. 977 and HR 1376), the Act to Save America's Forests April 28, 1998, U.S. Capitol http://www.saveamericasforests.org/news/ScientistsStatement.htm	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.102	Ehrlich, Anne Ph.D., David Foster Ph.D. and Peter Raven Ph.D. 2002 **"Scientists Seek Logging Ban on U.S.-Owned Land"** New York Times, April 15, 2002 http://www.nativeforest.org/campaigns/public_lands/stb_5_30_02.htm	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.103	Long, Richard D., U.S. Department of Agriculture Office of Inspector General **"Western Region Audit Report: Forest Service National Fire Plan Implementation"** *Report No. 08601-26-SF*, November 2001. http://www.usda.gov/oig/webdocs/08601-26-SF.pdf	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.104	**Comment:** Supervisor Lannom, your insincere, disingenuous, trickery desperately trying to convince the public that your logging and roading “restores” anything but corporate profit is now a Forest Service Employees for Environmental Ethics focus issue. You destroy your professional integrity by pushing this “restoration” lie. http://fseee.org/index.php/stay-informed/projects/1004368	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.105	**Comment:** You are obedient Supervisor Lannom. You title your timber sale The Middle Fork Weiser River Landscape Restoration Project. Like any good USFS team player, you use "forest health" 6 times in the draft EIS. You use the word "restore" 104 times in the draft EIS. You know the USFS deception language well. It would bother most people to fool and lie to their supervisors (322 million Americans) who provide the money for their salary. You don't care	Thank You for your comment.

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	do you? Why? Your job pays well and you know dealing with timber sales in the public arena **honestly** will eliminate your future promotion opportunities. I have included hundreds of statements by independent Ph.D. scientists describing how logging and road construction destroy the ability of many natural resources in the forest to function properly. How can this be "restoration"?	
1.106	**Request for changes to be made to the final NEPA document:** Assure the timber sale name does not include the words "restore" or "restoration." Also wherever the NEPA document tells the public a natural resource will be restored include the following information: 1) the present condition of the resource and how it got that way. 2) why the resource should be restored. 3) the specific action you will take to restore the resources including effectiveness information. 4) identify other proposed actions that will still occur that might further harm the resource that needs to be restored. Finally, please list the qualifications of your IDT members that justifies their rejection of these scientists' descriptions of the tragic damage inflicted on forest resources and instead conclude this timber sale restores the forest. Failure to do so violates: 18 USC § 1519 and the public trust. 40 CFR § 1500.1(b) because actions were not taken to protect, restore, and enhance the environment, and 40 CFR 1500.2(f) because actions were not taken to avoid or minimize any possible adverse effects of their actions on the quality of the human environment. Lying about the effects will give the Responsible Official an excuse to take no action to eliminate the damage, thus 18 U.S.C. § 1001 has been violated.	Comment noted.
1.107	**The children born 50 years from today will not appreciate the ecological plunder caused by this timber sale. How could anyone ignore children? They won't appreciate their land being plundered to provide a natural resource extraction corporation with profit.**	Comment noted.

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	Most Americans want future generations of kids to have the opportunity to experience the quietness and solitude in a real, undeveloped forest. This will become more important in 2070 when the predicted population of the United States will be 418 million people. The wild UNDEVELOPED national forests will provide one of the only escapes from the insanity of a world driven even more by money than it is now. **Comment:** The Middle Fk Weiser sale will take away more undeveloped national forest acres from the legacy the unborn kids of the future. Which is most important: the future kids of America or another summer home for the CEO of a timber extraction corporation?	
1.108	In 2015 the total area commercially logged in all USFS regions was 205,000 acres. The 10-year average is 220,000 acres. At this rate, future generations will loose [sic] 11,880,000 acres of undeveloped forestland. You contribute to this sad statistic with this timber sale. I wonder if all your IDT members are proud to assist you in your plunder. Do they know the USFS logged 903,000 acres in 1990?	Thank you for your comment. http://www.fia.fs.fed.us/library/brochures/docs/2012/ForestFacts_1952-2012_English.pdf and http://www.fs.fed.us/research/sustain/criteria-indicators/indicators/indicator-210.php (indicators 2.10 through 2.14). Additionally, there are approximately 74 million acres reserved from wood product utilization (approximately 10% US forested lands). see website http://www.fs.fed.us/rm/pubs_other/wo_gtr078_016_018.pdf
1.109	**Opposing Views Attachment #15** contains quotes by Hilda Diaz-Soltero, Dr. Ann Bartuska, Chief Dale Bosworth, Associate Chief Sally Collins, Chief Dr. Mike Dombeck, Chief F. Dale Robertson, Agriculture Secretary Dan Glickman, and USFS Chief Tom Tidwell, who all tell the public the USFS depends on "best science" as the basis for it's projects.	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project – Appendix 10: Response to Comments - Literature and Opposing Views
1.110	Supervisor Lannom, after reading the effects disclosures in Chapter 3, I must conclude Mr. Almack, Mr. Bumgarner, Ms. Cropp, Mr. Eichman, Mr. Epstein, Ms. Dobb, Ms. Giambra, Ms. Hanson, Mr. LaChapelle, Mr. Penny, Melanie Vining, Mr. Whiteman, and Ms. Wroblewski have been obedient. Their analysis disclosures show they have no problem trading off the health of the resources they are responsible for protecting for your precious volume. They wrote what you wanted to read.	Thank You for your comment.

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1.111	Don't the kids born in 50 years deserve a place to escape the insanity of a United States with 400 million people? Don't they deserve to experience solitude, quietness and an occasional nature sound? Unless USFS employees start rejecting the USDA notion that a forest is like a wheat field to be "harvested" regularly, these kids will only be able to experience an undeveloped forest on a DVD depicting the "old times."	Thank You for your comment.
2. Elke, Curtis - USDA, Natural Resource Conservation Service		
2.1	NRCS has reviewed the Draft Environmental Impact Statement (DEIS) for the Middle Fork Wiser River Landscape Restoration Project to evaluate potential effects on the issues listed below. (i) Soil suitability and limitations (ii) Provisions for erosion, sediment, and dust control (iii) Considerations for soil and water conservation management systems (iv) Water discharges (v) Effects of disruption to the natural drainage patterns and severance of private land units (vi) Impact on previously installed soil and water conservation management systems (vii) Impacts on prime and unique farmland (viii) Impacts on ecosystems (ix) Impact on other NRCS-related projects The project area falls within the unmapped soil survey area ID700, South Idaho Forests. Therefore, soil suitability and limitation and impacts on prime and unique farmland were not analyzed. There were no previously installed soil and water conservation management systems or NRCS related projects identified in the project area. The Forest Service will address all NRCS concerns related to all other issues identified above by implementing the 69 design features identified in the DEIS.	The Forest Service will implement all project design features identified in the FEIS section 2.4.

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3. Hamilton, Ron – Adams County, Natural Resources Committee		
3.1	The PFC has met and reviewed this project and the proposed alternatives developed for this restoration project. The group including myself, reached consensus and supported a slightly modified version of Alternative 2 as proposed by the Forest Service in the project DEIS. I commend the Forest Service for the Alternatives that they developed for the project because they portray alternatives that create a variety of ways under which the project area could be managed based on constraints that came from a variety of sources from legal mandates to science sources to personal experience. In all cases interpretation plays an integral role. That interpretation and open-ended question that can occur resulting from it is the area that I will be seeking resolutions about. One area of some concern for the coalition dealt with wildlife security, in particular elk security tied to the Hillis paradigm. While the issue had resolution the issue that has not been resolved is the overall management of elk numbers in relation to the yearly habitat situation. In some regard, this starts with Payette Forest Plan that recognizes winter range as being up to 5000 feet elevation. That certainly does not reflect the current situation. The most apparent reason elk remain at that elevation until December 31 is that hunting season lasts that long. Recently the elk after season closed immediately move to the Indian Valley, Crane Creek and Little Weiser Valley ranchland and the available hay stacks when the hunters left. To try and halt the ranchland depredation elk fences are installed by IF&G, but they run out of resources and the ranchers lose patience. Many of these ranchers providing winter feed also have Forest Service grazing permits, some in the Middle Fork. There have been during recent years when grazing permit turnout was delayed because proper-use was reached on the lower areas of the allotments from early spring gazing by elk. The question really is how much more secure do you need elk to be. I realize this is the "cash cow" for IF&G but it has other costs. If the ranchers sold out and developments of	The Forest Service does not have the ability to address the elk population issue with this proposal and it is outside the scope of the Project. It is important to note that increases in the size of elk security areas as modeled with this Project does not equate to increased elk populations.

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	summer homes and ranchettes occurred, the winter range support for elk would quickly dwindle. Did the IF&G collaborate with habitat providers before they established the population goals, my rancher contacts don't remember any such contact. I realize the Forest Service only provides habitat but that management should at least have a cooperative element associated with it. It would be very nice to see some of the elk disappear so that some of the great mule deer hunting of the past might return to the Council Mountain area. Many record book bucks came from that area in the past. It would seem the Forest Service would be supportive of a broader array of animals on the habitat provided by the Payette National Forest.	
3.2	The PFC spent some time discussing restoration strategies, as well as fire patch and pattern to assure that the proposed treatments in the alternatives would lead to the restoration of fire in the Middle Fork project forest area. In reviewing your literature sources on fire restoration treatments one helpful source that you seemed to have missed was; Mimicking Nature's Fire, by Stephen F. Arno and Carl E Fiedler published by Island Press. This book by Forest Service scientist of the Rocky Mountain Research Station. It has numerous case studies of forest fire restoration treatments in several western forest ecosystems. The authors are respectively a forest fire ecologist and forest silviculturist. The authors seem to support the proposals in the MFWR project. At several different places in the document there are canopy coverage numbers cited. What is not readily apparent is how that number is verified for a number of purposes. There are various tools that can be used, which with some experience, can provide repeatable and verifiable measures and it would seem important that some tool and procedure be defined so that successes with applications can be repetitious. As a silviculturist I have some concerns that many of the crown canopy cover numbers may be higher than appropriate in some situations. In some prescribe fire situations that I am familiar with close canopy cover in small sawtimber sized ponderosa pine was very prone to scorch and higher rates of mortality than desired. This seemed to occur when even a very weak local inversion situation	Thank you for your comment. The Fuels Specialist has reviewed this book for relevance. Most of the principals discussed are presented in other peer reviewed literature cited in References section in Chapter 4 of the FEIS including newer articles by one of the authors. Fiedler C. E., Metlen K.L., Dodson E.K. 2010. Restoration treatment effects on stand structure, tree growth, and fire hazard in a ponderosa pine/ Douglas-fir forest in Montana. Forest Science 56, 18–31. As shown in Glossary from Chapter 4 of the FEIS: Canopy closure—Canopy closure represents the total non-overlapping crown closure of all trees in a stand, excluding the seedling tree size class. Trees in the seedling tree size class are used to estimate canopy closure class only when they represent the only structural layer present. Canopy closure classes are based on the following: • Low = 10–39% canopy closure • Moderate = 40–69% canopy closure • High = 70% or more canopy closure (USDA Forest Service 2003) Canopy cover—For the purposes of this document, canopy cover is used interchangeably with canopy closure.

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	caused smoke and heat buildup under a denser canopy did not allow dispersal. This may not happen but tools to measure so monitoring results can be transferred and adaptive management practices employed is important.	
3.3	Several places in the document describes the implementation of the FT-PC-MSw treatment. In reviewing that treatment there appears to be some problems. (1) Again canopy covers appear to be higher than appropriate to accomplish the objective especially in the regeneration areas. The 10% cover level for seral species especially western larch, because the opens are small and often shaded by side walls, larch would probably not regenerate even if planted. (2) Another concern I have is the retention of grand fir as legacy trees. Grand fir is a nutrient hog and it is a prolific seeder, especially when slightly stressed physiologically. Leaving such trees will often result in swamping of seral species regeneration because of the competitive nature of grand fir seedlings. There is much research and anecdotal evidence supporting this. (3) When dealing with whitebark pine it is important to evaluate the viability of blister rust spores. I do not recall the literature dealing with this. Leaving dead affected trees as snags could exacerbate the problem of infections. (4) In the CT-MP treatments it appears that the density levels are sufficiently high that re-entry to treat these areas will occur between 20 and 30 years unless substantial canopy loss and interaction is acceptable. That does not coincide with discussions about re-entry that the PFC had with the agency concerning road management and the need for transportation facilities to treat the stands to allow for more prescribed fire treatment. (5) In the CT-ASP treatment situations it will be very important to monitor for success of the treatments. Treatments especially when small in size will allow the suckering of the aspen clones but often those ramets are consumed by ungulates unless the treatment size is sufficiently large to simply overpower the ungulates with food supply. The other alternative is to provide sufficient protection so that	1) The canopy cover after FT-PC-MSw treatment are discussed in the FEIS on pg. 52. “Canopy cover in created patch cuts would generally be 0–10%, and less than 10 acres in size.” Not just 10%. 2) Grand fir is not considered a legacy tree in MFWR analysis. 3) Concern Noted- Seed stock showing blister rust resistance qualities will be used to combat this problem. 4) Concern Noted- When using prescribed fire on reentry we will use natural barriers or man-made barriers as fire lines. 5) Concern Noted – Monitoring aspen regeneration units is part of the Monitoring Plan. See Table 1 in FEIS Appendix 4 – Monitoring and Evaluation

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	ungulates can't reach the ramets. The monitoring is often difficult to get done because at higher elevation the elk and other ungulates will utilize the ramet to near ground level and such use is almost undiscernible.	
3.4	There is no discussion about any form of protection to any of the different regeneration situations. Is any fencing planned and if so how will this be handled with grazing permits?	Thank you for your comment. We mentioned fencing of wet meadows, seeps, springs, and regenerating aspen; however, conifer regeneration and planting (whitebark pine or other conifers) units were not mentioned. This was added to the FEIS under plantings in Associated Actions on Pg. 60. Fence construction/maintenance funding source will depend on which resource will benefit.
3.5	At page 61 in the temporary roads discussion there is a description about relocating a temporary road on the location of an "unauthorized" exist roadbed. That appears to me to be a descriptor for identifying a road that should exist on the Forest Transportation system at some maintenance level such as OM1. The roadbed was used once for management activity and it is being used again for management activity, is the reason for future re-entry being done away with?	Unauthorized roads are those that are not part of the NFS road atlas. Most all of these were constructed for past vegetation management. Rather than just decommissioning these roads they will be reconstructed and used as temporary roads for this project. All temporary roads, whether newly constructed or unauthorized roads used as temporary roads will be fully decommissioned as part of this project. If decommissioning is the final disposition of the road it was determined through the MFWR TAP and further analyzed with this Project to not be needed in the Minimum Road System. See Appendix 2 for the disposition of each road per alternative.
3.6	Throughout the document there were a number of comments about the need to control or reduce disturbance in order to reduce sedimentation. While there is some limited discussion about graveling of roads the discussion is very limited. With several gravel sourced identified it appears appropriate to consider much more graveling of roadbeds, including ditch lines and some fill slopes. Numerous closed or OM1 roads that have little soils for vegetation recovery should have gravel placed on them to reduce the effect of splash, across road and other sediment moving water transport. This practice was used extensively in the South Fork of the Salmon to help mitigate sediment movement on the erosive granites following the 1994 fires salvage efforts	Thank you for your suggestion. Closed Maintenance Level 1 (ML1) roads receive resource protection maintenance and treatments appropriate to sustain the road for future use while minimizing resource damage. Example direction for this protection is given in Project Design Feature 21 in Table 2.4-3 of the FEIS.

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3.7	Several of the proposed log haul roads are not low-boy compatible and have some safety issues with the numerous recreational drivers on these roads. Road enhancement should be undertaken to allow the hauling of equipment for both logging and fire control purposes. Mile markers would add to the safer user of the roads especially when logging is on-going. Adams County's Middle Fork road has several segments that need heavy maintenance to increase safety and reduce sediment. It would be very appropriate to look to some of the new congressional authorities to aid in the reconstruction of this road with such things as retained receipts from the projects proposed.	Prior to road reconstruction for use associated with project activities Forest Engineers will prepare a road design package which will ensure all roads are brought up to standard for the expected level of use.
3.8	There is a discussion about the effectiveness of road closures on various classes of roads. It is important to understand why some "closed" roads are used by the public that should not be. The MVUM is a poor aid to keep people honest about use because many see tracks on roads, made by authorized or FS users and they believe they are open. These roads should have metal fence gates and signs with appropriate language that explains the limited allowed use. It is important to sign these gates appropriately including not blocking the gates by parked vehicles.	One part of the project is to ensure effective closure on year-round and seasonally closed National Forest System Roads within the project area. In addition the majority of unauthorized roads currently drivable but not on the MUVM will be decommissioned, or officially added the NFS and put into long-term closure.
3.9	Will the Forest Service be working with livestock permittee's to allow some closures of trails when they are needed temporarily to aid in the movement of livestock? Motorized use when cattle are being moved causes many problems including lost cattle and user conflicts.	During project planning grazing allotment permittees were engaged to identify roads and trails needed for allotment operations. There is no plan for public trail closures for trailing of cattle.
3.10	Consistently, the PFC members and others have raised the issue that Road Density in the term of miles/ square mile while used as a term of evaluation for Forest Plan purposes is a very poor standard of measure because it accounts for very few things that actually influence the watershed conditions. The agency has published other standard of measure that should become the standard of influence dealing with a watersheds condition framework	The WCI under the Flow/Hydrology pathway for Road Density/Location in the Forest Plan includes road density levels and those differentiate the categories Functioning Appropriately, Functioning At Risk, and Functioning at Unacceptable Risk. Assessment of these WCIs is required by the Forest Plan (Appendix B, p. B-19). The road density WCI is one among many WCIs which are considered when making an overall determination of the status of a watershed (Appendix B of the Forest Plan).
3.11	At page 80 in the graph in the Alt 3 column the last measurement line has an error in it I believe.	Thank you for bringing the needed edit to our attention. The item has been checked and will be corrected if needed in the FEIS.

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3.12	One of the evaluation items discussed in a watershed evaluation area is a term ECA, which is undefined in the glossary of terms but defined in the acronym section as equivalent clearcut acres. I have previously raised the point how poor this term is and how it was discussed and set aside as almost of no use by many watershed and water scientist when it was introduced in the 1980's. There are so many more drivers in the watershed equation that ECA is of little use and often inappropriately biases things that actually influence the hydrograph of streams and hence the sediment transport.	The WCIs for Disturbance History and Road Density/Location in Appendix B of the Forest Plan include ECA levels and differentiate the categories Functioning Appropriately, Functioning At Risk, and Functioning at Unacceptable Risk based on percent ECA. Assessment of these WCIs is required by the Forest Plan (Appendix B, p. B-19).The Middle Fork Weiser River IDT used the best available scientific information as well as Forest Plan indicators, including ECA, in discussions of effects of the proposed actions on various resources, including watersheds. See FEIS, Chapter 3.
3.13	At page 109 of the DEIS dealing with coarse woody debris, how will the situations be handled when no trees are cut that meet the 15 inch diameter standard? It is possible in many of the PVG 7 thru 11 that trees being removed are under that size. Is there an expectation that this material is rather uniformly distributed? Does that seem natural based on the spotty influence of insects on stands that are burned naturally	Per project design feature 38, if CWD size class objectives cannot be met due to undersized material, the surrogate goal is to maintain an overall trend towards desired conditions. At the time of activity, this will be achieved by retaining all snags (minus safety hazard trees). This may be supplemented by returning the largest cull material and tops to the unit following processing, potentially reducing biomass and/or firewood deck opportunities. In addition, 10% stand mortality is assumed, based on fire and insect disturbance regimes, contributing additionally to desired conditions over time.
3.14	Table 3-28, page 197, Alternative 2 total appears to be incorrect. Page 255, 3.4.5.6.1 first paragraph, the correct Big Game Hunting unit is 32A.	Thank you for bringing the needed edit to our attention.
3.15	Page 261, 3 para, describes the squirrels as usually associated with deeper well-drained soils. That may be true if there are no other squirrels to compete with but obviously in most of our area Columbian squirrels occupy those sites.	Thank You for your comment.
3.16	Page 260, 2d winter range paragraph, 2d sentence, the winter range habitat not only abuts private land but it mostly includes private lands. As I previously pointed out this creates more than a little concern	Outside of the scope of the project.
3.17	The entire Canada lynx write up actually points to the need to choose and implement Alternative 4 not only to more appropriately treat the unoccupied habitat for any future expansion of the Lynx but to actually increase the habitat for the whitebark pine, also a listed species but actually present and declining on the area. This coupled with the need	Whitebark pine is not a listed species under ESA. It has been proposed and has been deemed warranted however listing has not occurred. Additional whitebark pine restoration treatments were included in the development of Alternative 5. Thank You for your comment.

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	to implement the newly developed WUI interface with Tamarack Resort and the developed Cascade Reservoir west edge seems to make far more sense. While the PFC is concerned about the litigation potential, litigants should more concerned about the loss of human property and life if treatments of the WUI and the fire risk are not undertaken in concert with habitat enhancement. Research for both species supports these proposals and the Forest Plan amendment which should have had an administrative caveat to allow such an undertaking really needs amending	
3.18	At page 337 one of the watershed resources indicators is roads decommissioned which on its face seems appropriate but in my estimation does little to indicate much except how handy someone is with an excavator or bulldozer. It would appear that this indicator would actually be much more indicative if were actually tied with elements of the soils resource area, the landtype map on page 429. Having had a lot of experience with the landtype association, landtypes, geomorphology and general geologic soil base I believe the miles of decommissioned roads can be tied to a number of potential affects that are relatively predictable. For example subsurface interface interception is highly predictive if the geology is intrusive(granitic), the landtype is fluvial, slope is moderate, but slope dissection is high and a road is on that slope on the slopes lower third. Each of those elements actually influences the interception and handling of the intercepted flow by the road and how various decommissioning practices would influence it. Using these existing elements tied to the landtype mapping should easily help establish priorities for treatments such as road decommissioning as a watershed resource influencer. The use of the landtype/landtype association maps to highlight landslide potential areas is very useful but I believe the agency is overlooking its potential use for developing other priorities to be field verified. I believe the tie to GRAIP-lite would be very appropriate is it hasn't been done.	The ecological objectives and benefits of road decommissioning are discussed in Chapter 3 of the FEIS. Roads proposed for decommissioning were surveyed in the field and characteristics of each noted. A treatment was recommended for each road based on its characteristics. The landtype(s) associated with each road were not analyzed in the FEIS. The model GRAIP Lite was run for all roads in the project area, but, unlike GRAIP, this model is not intended for characterizing road sediment at the individual road level. Instead, it is best suited for describing sediment generation and contribution from a road network at the drainage or subwatershed scale or larger. At finer scales, error increases greatly (Nelson et al. 2014). GRAIP Lite does rely on local erosion and climate data in its sediment predictions but is not linked specifically to landtype/land association maps.

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3.19	At 3.5.1.4.3. Road Condition Surveys, the last sentence in the paragraph describes actions that appear tied to the broad category the agency defines as decommissioning then ends with that encompassing term. It would help to be specific but if all tools are being considered then a term like decommission might suffice.	A full range of treatments was considered for roads proposed for decommissioning with the project. The objective of decommissioning is defined in the watershed section (3.5) of Chapter 3 of the FEIS as restoring soil productivity and ecological function; depending on the existing condition of the road on the ground, the treatment most appropriate for achieving this was recommended. The general term "decommissioning" was intentionally used in section 3.5.1.4.3 of the DEIS to reflect this.
3.20	At 3.5.1.5. The 1st para, 1), at which pre or post fire is the aquatic system's amount and type of vegetation appropriate? This seems to contradict the observations that researchers and others made on the ground relating to RCA vegetation and the rationale for actually doing some treatments in alternative 4? In this general area your narrative leads me to ask the question; would obliterating roads in the upper slopes/elevations actually change the risk factor if no near riparian roads are actually treated? How sensitive is the measure to the actual response or has it ever been assessed	The statement at 3.5.1.5 in the DEIS is taken from page III-18 of the Forest Plan. "Appropriate type and amount" of riparian vegetation will vary by elevation, geology, water body type, aspect, etc. This Forest Plan description of desired conditions is general and is intended to be used along with other management direction, current science, and professional judgement on the part of resource specialists in evaluating effects of management actions. It is not used in this document as a justification for or against treatment in RCAs.
3.21	Table 3-74, check the Mica Creek columns and see if there is not an error in the graph between the two GRAIP columns.	There is not an error; the low number in the GRAIP column relative to the GRAIP Lite column reflects the small percentage of roads surveyed in that subwatershed. Only in the Granite Creek subwatershed were most of the roads surveyed using the GRAIP protocol. The GRAIP column is there to show the difference between roads surveyed using the GRAIP protocol on the ground vs. roads modeled using GRAIP Lite.
3.22	Page 342, both the graphic and write up describe year around or open roads. The term is deceptive in that these roads are not plowed of snow so they are not open to auto traffic year around, however they may have snow machine use. If the roads were plowed and open during breakup and frost out and other such periods I would assume that other treatments might be appropriate to deal with sedimentation or other water handling difficulties. Also check the 2d para. I believe the word 'any' should be many.	Open year round refers to roads that do not have any administrative closure for any part of the year. This is to differentiate between seasonally open roads. You are correct that an open road may not be open drivable due to snow. Generally roads are described as open only for the Project. Thank You for your comment.
3.23	At page 344 there is more discussion about ECA, which is not glossary defined. There are statements that seem to refer to the acceptance of this term as appropriate in hydrologic literature. I suggest you re-	Chapter 3.5, Watershed Resources, introduces ECA as equivalent clearcut area in Section 3.5.1.3. The Forest Plan defines ECA. The WCIs for Disturbance History and Road Density/Location includes ECA levels and those differentiate

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	evaluate such inferences. The term as far too many FS people use it to infer an almost linear relationships with influences associated with the hydrograph of many mountainous streams and rivers. There are so many effectors of the physics related energy influencers that openings, no matter how they are created, do not have any real equivalency as inferred by ECA. To say it has any sort of direct relationship in a formulaic sense is almost nonsense except in specific sets of circumstances where the other influencing variable are controlled. In another area of indicators you seem to recognize that ECA isn't very appropriate, which is it?	the categories Functioning Appropriately, Functioning At Risk, and Functioning at Unacceptable Risk. Assessment of these WCIs is required by the Forest Plan (Appendix B, p. B-19).References used in the discussion that correlates the removal of crown cover and changes to magnitude and timing of peak flows include studies conducted in the Rocky Mountains and northeastern Oregon (Stednick 1996 and Fowler et al. 1987, respectively). Research has shown various increases in water yield after reductions in crown cover (summarized in Stendick 1996). Since the scientific correlation of approximately 20 percent ECA to potential changes in peak flows was established in many studies (Stednick 1996), current research is not repeating the same studies. The Middle Fork Weiser River IDT used the best available science in discussions of effects of the proposed actions on the various resources, including science supporting the use of ECA. See FEIS, Section 3.5.
3.24	At pages 349 & 350, riparian edge vegetation importance is alluded to, but what is not dealt with in detail is the influence this vegetation has on numerous water elements but also the over-all watershed stability. The bank and instream stability is greatly influenced but a major affecter on this situation is adjacent tree form vegetation. These near edge trees can supplant highly the stabilizing bank vegetation through shading and nutrient loss. In many cases the obvious cottonwood, aspen and dogwood, etc. brush is out competed by nutrient and light hogs such as grand fir.	Watershed function (indicated by evaluation of Forest Plan Appendix B Watershed Condition Indicators, or WCIs) as a result of proposed riparian treatments is discussed in both the Fisheries and Watershed Resources sections of the FEIS (Chapter 3.6.4.1 and 3.5.3.1, respectively). Specifically, the influence of root strength on bank stabilization is displayed in Figure 3-60. Riparian conservation area (RCA) treatments proposed in the action alternatives is expected to increase seral (including deciduous) species vigor within RCAs.
3.25	At Page 454 in the discussion of Whitebark Pine there was little discussion about the sympatic relationship birds, in particular Clarks Nutcracker and whiskey jays have in the regeneration and redistribution of whitebark pine in these upper elevation sites. There seems to be little discussion about how the on-going problem with West Nile virus on birds is having on these and other birds that aid in the regeneration and distribution of these large seeded species such as wingless or nearly wingless very large seeded species such as whitebark pine. The seed transport in lingual pouches and placement below ground surface storage of the seeds of species like whitebark pine is a primary source of regenerating many of these high elevation open grown forests.	Thank You for your comment.

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3.26	At 3.10 Roadless there is little discussion about the number of miles of roads, no matter what kind of road term the agency uses, that are within the IRA's yet many are determined to have a primitive theme assigned to them. How, with those situations existing is it possible to compare un-inventoried adjacent roadless areas resulting from the 9th circuit decision? Just what do you exclude or include in that assessment seems to border on the inane. While the PFC has not dealt with IRA's to date there is obviously a consistency problem, information currency and choice of theme problem associated with many of these areas.	Thank You for your comment.
3.27	The document seems well prepared and thorough in its approach. Above all it seems to support the need to proceed with management activities that will lead to a forest ecosystem that is more capable of dealing with fire. The mere presence of substantial number of insects and diseases that seem to be precursors to large fires points to the need to proceed with the project. It also seems to point to the need for the Forest Service to select for implementation alternative 4 because it implements more of the goals and desires of the current Forest Plan. That includes amending the plan to implement the new lynx strategy that is supported by "science". In many cases Forest Plans are so dogmatic in their approach that they forget that science continues to move forward but Plans lack the capability to undertake adaptations in management allowing those new found outcomes to be implemented. Even regulatory situations change based on the fire situations of recent years and now new standards for the wildland urban interface will definitely need to be put in-place for the Tamarack Resort area. All these seem to lead toward Alternative 4.	Thank You for your comment.
4. Jerome, Irene – American Forest Resources Council		
4.1	Thank you for the opportunity to comment on the proposed Middle Fork Weiser River Landscape Restoration Project (MFWR) Draft Environmental Impact Statement (DEIS). The MFWR project is located in the Weiser River drainage approximately 6 miles southeast of	Thank You for your comment.

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	Council, Idaho and is a very important and popular area to the citizens of Adams County and to AFRC members. AFRC is a regional trade association whose purpose is to advocate for sustained yield timber harvests on public timberlands throughout the West and to enhance forest health and resistance to fire, insects, and disease. We do this by promoting active management to attain productive public forests, protect adjoining private forests, and assure community stability. We work to improve federal and state laws, regulations, policies and decisions regarding access to and management of public forest lands and protection of all forest lands. Many of our members have their operations in communities within and adjacent to the Payette National Forest and management on these lands ultimately dictates not only the viability of their businesses, but also the economic health of the communities themselves.	
4.2	First we strongly support Alternative 4. Compared to the proposed action, Alternative 4 proposes additional treatments in potential vegetation groups (PVGs) 7 - 11. These vegetation groups are critically in need of treatment and recent science that strongly supports and advocates management in these higher elevation forests. Please refer to the recent publication PNW-GTR- 897, *The Ecology and Management of Moist Mixed-Conifer Forests in Eastern Oregon and Washington: a Synthesis of the Relevant Biophysical Science and Implications for Future*	Thank you for your comment. Literature Cited in comment was used in the analysis and is in the project record.
4.3	Unfortunately, the Forest Service has tended to avoid treatment in these areas in the past despite supportive science. The MFWR project area has some whitebark pine in PVG-11 and Alternative 4 provides treatments that would help sustain and enhance that important species. As a result of additional treatment of PVGs 7-11, Alternative 4 provides the most work toward maintaining and promoting large tree size classes across the landscape- an important part of moving the Forest toward the desired condition.	Thank you for your comment.
4.4	AFRC, in conjunction with the Payette Forest Coalition, attended a field trip to the MFWR project planning area in November 6 of 2015. One of the discussion stops was in an area that is designated as lynx habitat.	Thank You for your comment.

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	However, according to the Forest Service wildlife biologist, the area is not suitable for lynx due to a lack of food appropriate food sources and at best would be habitat for secondary populations of lynx. Game cameras in the area for several years have not identified any lynx passing through the area. Please consider a site specific non-significant forest plan amendment to allow for creating more than 30 percent unsuitable Canada lynx habitat within the MFWR Lynx Analysis Unit only. Given that over half of the Payette National Forest is not available for general forest management - but is still vulnerable to catastrophic wildfire - this is critical for local economies, recreation, and forest health and resilience.	
4.5	Elk security and protection requests and requirements are becoming problematic in this area. Current elk numbers in the project area exceed population goals. This issue is complicating forest treatments and road management issues. Adequate road systems are critical for safe public access, fire access, and contractor access. Thus the project should include a goal of reducing elk cover.	Reducing elk cover will not be a goal for the project. Vegetation treatments may in fact reduce cover but will not affect elk security areas. Elk security areas are based on open road densities during the high-powered rifle hunting season not actual vegetative cover. The project seeks to produce a manageable minimum road system that will balance the needs for access for future forest management. Thank you for your comment.
4.6	Alternative 4 also provides the opportunity to do appropriate treatments next to the Tamarack Ski Area and Resort and the heavily developed Cascade Lake west side. During the 2007 Grays Creek Fire the governor of Idaho declared a state of emergency to ensure these areas were protected and provides the resources to do that. Adams County is in the process of adding this area as Wildland Urban Interface (WUI) to their Community Wildfire Protection Plan.	The Forest is working with the County on the County Mitigation Plan, both Alt 2 and 4 include fuel breaks that address these concerns.
4.7	Second, AFRC strongly supports working in riparian zones when scientifically appropriate. Research provided by Charlie Luce strongly encourages treating right next to streams to enhance riparian areas. This type of work directly next to streams does the most to stabilize stream banks and accelerates vegetation sprouting after fire. Please ensure that you are utilizing the "best available science" when treating these RCAs. Some areas of the MFWR project have roads that are close to streams with the vegetation next to the roads away from the streams in desperate need of treatment of provide for firefighter	The FEIS does include treatment within riparian areas intended to meet Forest Plan Appendix A and B direction; acres vary by alternative and include a combination of mechanical, hand, and prescribed fire treatment. The RCA treatments will be in accordance with the Project Design Features (FEIS, Table 2.4-3). Vegetation objectives would be met and no detrimental effects to riparian dependent resources, sediment delivery, or temperature would occur.

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	safety and access. Alternative 4 provides for the most treatment of RCAs.	
4.8	In summary, the MFWR project as proposed under Alternative 4 provides a comprehensive plan for addressing and improving forest health, preserving and protecting valuable watersheds, recreational, and private properties as well as treating 17,140 acres to maintain or promote desired species and over 10,000 acres to promote and/or maintain large tree size classes. Subsequently Alternative 4 provides the most forest products that will be available for the local economy and the best mitigation for reducing uncharacteristic fire events in this area. We encourage you to select and implement Alternative 4 on the MFWR project.	Thank You for your comment.
4.9	Thank you for the opportunity to provide comments on the MFWR DEIS. I look forward to following the implementation of this project as it moves forward.	Thank You for your comment.
5. Johnson, Sara – Native Ecosystems Council & Garrity, Mike – Alliance for the Wild Rockies		
5.1	At this time, NEC would also like to request a "hard copy" of the DEIS and its maps and appendices.	A published copy of the Middle Fork Weiser River Landscape Restoration Project was sent upon request.
5.2	1. This project is being illegally tiered to the Wildlife Conservation Strategy Forest Plan amendment which has never been completed. This amendment cannot therefore be implemented for this Weiser River Landscape Restoration Project.	This Project does not tier to the Wildlife Conservation Strategy Forest Plan amendment in any way. Wildlife conservation principals that were used in the analysis were taken from literature representing the best available scientific information available.
5.3	2. The DEIS is violating the NEPA because the analysis of project impacts to wildlife is being illegally tiered to the DEIS for the Wildlife Conservation Strategy Forest Plan Amendment, which has not completed the required National Environmental Policy Act (NEPA) public involvement process. All evaluations for wildlife impacts will have to be directly assessed for this project.	See response to comment 5.2 above.

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5.4	3. Managing for "old forest habitat" is outside of the current Forest Plan direction, and is therefore illegal.	The language in the FEIS has been corrected – the Forest is managing some large tree forests for general old forest characteristics as described in Appendix A, p. A-21-22, of the Forest plan, not managing for old forest habitat as described in Wisdom et al. 2000.
5.5	4. The management area designations provided for in the Wildlife Conservation Strategy Forest Plan amendment cannot be applied to this project, as this amendment has never been completed.	The Forest is managing within the ranges described in Tables A-3 and A-5 of Appendix A of the Forest Plan, pg. A-3 and A-6 respectively.
5.6	5. The purpose of this project, to restore wildlife habitat, is a violation of the NEPA and the NFMA because the DEIS does not cite any scientific evidence that any wildlife species will be "restored" with the proposed logged and burning.	Restoring wildlife habitat is not the same as restoring wildlife species. The purpose of the Project is to get the wildlife habitat within the Project area within the ranges of the Forest plan desired conditions also discussed in the FEIS as the Historic Range of Variability (HRV). Tables A-3 and A-5 display desired conditions for size class and canopy closure by PVG. By managing for stands to be within these ranges the wildlife habitat within the Project area will be restored. This is what is meant by the statement in the purpose and need for the project.
5.7	6. The DEIS is completely lacking in addressing the vast body of science that demonstrates that the proposed actions will be highly detrimental to wildlife, including management indicator species the white-headed and pileated woodpeckers, and sensitive species as the flammulated and boreal owls, the goshawk and great gray owl, the three-toed woodpecker, and the fisher. The project will also be detrimental to all old growth forest songbirds, and songbirds that require dense, undisturbed forest habitats. The project will also be detrimental to over 25% of forest birds that require snag habitat for nesting and foraging. All these severe adverse impacts have been completely ignored in the DEIS, in violation of the NEPA and the NFMA.	Forest Plan Objective 0337 for Management Area 3 states specifically the requirement to increase white-headed woodpecker (both a MIS and Sensitive species) habitat in ponderosa pine stands within different vegetation groups, moving these stands toward desired range of conditions, as noted in Appendix A of the Forest Plan. Requirements for flammulated owls are almost identical, as noted for Objective 0338. Although each species noted in the comment may have some level of habitat alteration caused by a restoration treatment, the population goals for wildlife species are based on the overall population at the Forest-scale. It is anticipated that managing appropriately for one priority species may adversely affect another species. The effects determination for these species also is based on a population scale, not at the level of the individual animal. It is anticipated that in the process of conducting forest restoration projects, habitat alterations will occur and moving particular stands toward the desired conditions may negatively impact other species, but not cause a trend in the population that would lead to Federal listing.

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5.8	7. The agency needs to include a valid alternative that would actually meet one purpose of the project, to restore wildlife habitat. This would involve just eliminating roads, firewood harvest, as well as addressing and correcting all water quality and fisheries issues.	There is a substantial amount of road decommissioning included in the Project. Firewood harvest was not analyzed in depth for wildlife resources. Two fish barriers will be addressed as part of the project. See FEIS 3.4 Wildlife Resources for project effects to wildlife.
5.9	8. The DEIS does not demonstrate specifically why the illegal definition of old growth forests as "old forest habitat" will meet habitat needs for wildlife. If this is going to be called "restoration logging" the wildlife species that will now use this logged forest need to be identified based on the current best science. Unless there is published, peer-reviewed science that shows that thinned, logged old forest is needed for certain wildlife species, these claims should not be made in the DEIS.	The Forest Plan provides a discussion about the differences between old growth and old forest. These definitions are based on scientific evidence used to develop the Forest Plan. The comment implies that old forest stands will be logged, further implying that entire stands will be altered. No stands have been identified in the MFWR project area as having the full suite of old forest characteristics. Some stands that have multiple old forest characteristics, but are not considered old forest, may be treated to improve old forest conditions, so that the stand is more likely to eventually become an old forest stand.
5.10	9. There is a considerable body of published science, and/or established wildlife management recommendations developed by researchers, that indicate moderate to extensive degradation of older forest habitat with thinning. There is no mention of any of this science in the DEIS. How can this provide the public with a reasonable assessment of project impacts when no information is provided on expected detrimental impacts?	As noted in Comment #5.9, above, no old forest stands have been identified in the MFWR project area. Stands that may show some of the characteristics of old forest may be treated to enhance the possibility of the stand moving toward old forest characteristics. It is understood, and discussed in several resource sections of the EIS that there will be some short-term negative effects in some stands, due to the prescribed restoration treatment used. However, the long-term effects of the treatment will be beneficial, moving the stand toward the desired conditions noted in the Forest Plan.
5.11	10. What current management recommendations developed by wildlife researchers are being applied for the proposed restoration projects? This information was never provided in the DEIS. For example, habitat needs of the white-headed woodpecker are available, but were not used in the DEIS. There are habitat recommendations as well for the goshawk, northern flying squirrel, fisher, pine marten, lynx, three toed woodpecker, pileated woodpecker, cavity nesting birds, birds associated with older, undisturbed forest habitat, elk habitat effectiveness, and elk security. Why isn't this information used for the analysis of project impacts and effectiveness of project design on wildlife?	Section 3.4 (Wildlife Resources) of the FEIS has been updated to include the best available scientific information for the species analyzed. See also project design features for wildlife, Table 2.4-1 in the FEIS. Where applicable, management recommendations and/or guidelines for particular species have been identified and provide the basis for management of those species. For example, the “Southwest Guidelines” are used to manage for goshawks Forest-wide; Forest Service General Technical Reports on fisher, marten, and lynx are used to guide management for those species. The lynx has specific management requirements presented in the Canada Lynx Conservation Assessment and Strategy. All of these guiding documents are presented in the EIS.

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5.12	11. The DEIS failed to include an action alternative that implements the current Forest Plan for old growth.	The Forest Plan does not have a management recommendation for “old growth” but instead describes management for old forest and old forest characteristics. Appendix A of the Forest Plan, pp. A-21, describes old growth on the Forest: In central Idaho, disturbance is a common occurrence. Historically, forested stands in lower-elevations vegetation groups likely developed large trees and relatively open canopies during mid-successional stages, and these conditions were maintained over time by frequent low-intensity fire disturbance. Dense stands and decadence typically associated with late successional stage conditions (old growth) rarely, if ever, occurred. Thus, historical stands dominated by large and old seral trees like ponderosa pine could be considered old forest, but not as “old growth” under any definition that incorporates a full set of late successional conditions.
5.13	12. There is no valid survey for old growth in the DEIS, or identification of "recruitment old growth."	Old Forest was discussed in section 3.4 of the FEIS. No surveys of “old growth” were conducted because the Forest Plan specifically states old growth rarely, if ever, occurs. Moving toward large tree size class with old forest characteristics was analyzed in Chapter 3 of both the Vegetation (large tree size class) and Wildlife sections (Old Forest).
5.14	13. Please address how restoration of wildlife habitat and control of insects and disease can be included as the same purpose and need for this project. Insects and disease are critical ecosystem functions for almost all wildlife species, either in providing direct habitat, or creating prey for other species. Restoring wildlife habitat and controlling insects and disease cannot be included in the same project, so the agency needs to define the purpose and need as one or the other, not both. The purpose/need contradicts each other.	The purpose and need states that the project moves vegetation towards desired conditions and emphasizes eight sub-categories. The two sub-categories referred in the comment include 1) improving habitat for family 1 species (which are dependent on early seral species) and 2) restoring spatial patterns that promote forest resilience to fire, insect, disease and climate change. Promotion of forest resiliency is not referencing control or elimination of insect activity within the MFWR project area. In many stands, moving vegetation conditions toward desired conditions involves leaving the forested component in variously sized clumps of different aged trees, providing valuable wildlife habitat structure. These clumps of trees still provide forest resiliency, but do not provide resistance to insect/disease occurrence.
5.15	14. The DEIS does not identify what the current level of snag habitat and size is within all proposed treatment units. How can snag management occur without any snag surveys?	Comment Noted. Strata were used as a general estimate to calculate snags per acre, which indicated that some size classes were deficit while others were within desired conditions (see the Vegetation Specialist Report in the Project record). Project design feature 53 requires that during timber harvests we retain all snags unless deemed a safety hazard. Project design feature 54

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		requires retaining sufficient live trees of appropriate size for future CWD and snag recruitment where CWD or snag levels are below desired ranges (Table 2.4-6). Section 3.4.5.2 in the FEIS discusses the current condition of snags and how management will affect them for wildlife. Satellite imagery identified Old Forest stands in the MFWR project area; however, none of these stands were verified with field plots. There are no treatments planned in stands identified as Old Forest.
5.16	15. The DEIS does not apply the current best science for cavity-nesting wildlife and woodpeckers. This science demonstrates that simply providing snags in harvest units will not maintain these species. They require high snag densities within forested habitat where the canopy cover is quite high. Use of outdated science as mitigation for wildlife is a NEPA violation, because the agency cannot demonstrate that the snag strategy has worked in the past (no woodpecker surveys) or that it will work in the future. No monitoring results for woodpeckers was ever provided in regard to past management actions.	The Payette has conducted MIS (white-headed and pileated woodpecker) surveys on established transects across the Forest for over a decade. Over the past 4 years, we increased the number of MIS transects to concentrate sampling within planned CFLR project areas, including the MFWR project. These sampling schemes were developed in cooperation with the Rocky Mountain Research Station (RMRS), which is still conducting white-headed woodpecker research on the west side of the Payette. Our mitigation for these species was developed in conjunction with researchers from the RMRS and the Pacific Northwest Research Station (PNWRS), specifically to incorporate the fine-scale habitat requirements of these species. The specific monitoring results are presented in the Wildlife Specialist Report in the Project Record.
5.17	16. The DEIS also completely ignored an analysis as to how forest thinning will maintain snag densities through time. The DEIS in fact fails to identify a severe impact of forest thinning and/or forest regeneration, that snag habitat will generally be severely reduce and/or eliminated for 100 plus years. This failure of a huge NEPA and NMFA violation, as the agency has failed to take a "hard look" as well as to disclose to the public the actual known impacts of the project on wildlife dependent upon snags.	Our snag discussions are located in Section 3.2.2 and Section 3.4.5.2 of the FEIS. Snag surveys were not conducted specifically for this project. Snag data for the West Zone of the Forest were collected in detailed surveys and included in the Payette National Forest Strata Handbook (USDA 2000), which provides a predictive tool for snag management by PVG (Potential Vegetation Group). Protection of individual snags occurs in Project Design Feature 53 (Table 2.4-6), which states, "Management activities shall emphasize: Leave all dead standing trees (snags), unless falling is necessary for safety. Retention of snags away from roads to reduce the potential of removal (by public use of fuel wood)." The Grays Creek Fire in 2007 created a large number of snags from trees that were burned at different intensities. Some areas burned in patches and other areas were more of a "stand replacement" fire, creating a natural mosaic of size and distribution of snags. The ongoing insect infestation in the MFWR drainage is also creating snags of all size classes.
5.18	17. There is no analysis of how all the proposed prescribed burning will impact large logs. Why is removal of significant amounts of this coarse	All actions are designed to restore vegetative and fuel conditions and would attempt to use fire in conjunction with thinning or use fire alone to reduce the

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	woody debris needed for wildlife? The DEIS needs to come clean with the public and explain that this burning is being done to remove logging slash (no benefit to wildlife) and to create a seed bed for the regeneration of a new crop of trees.	risk of losing key ecosystem processes. Thinning provides managers with a more precise tool to move stands toward the desired conditions in a more timely fashion, and given a wildfire event occurring prior to the application of fire, improve the likelihood that wildfire severities would be more representative of historic conditions. During logging and prescribed burning activities logs are not purposely targeted. Prescribe burn prescriptions specify a window of weather and fuel moisture conditions which must be met prior to initiating a burn. Burning within these parameters protects the residual standing trees and other vegetation, and protects down woody debris and other ground-level ecosystem components. While not an exact science, burn prescription "windows" allow a level of control over post-burn outcomes.
5.19	18. The DEIS does not clearly explain how prescribed burning is expected to impact snags. What type of monitoring information is available on past burning and measurements of snag and downed log losses? If this information is not provided, the DEIS is merely "speculating" on burning impacts. Also, the DEIS suggests that burning will increase snags, but this is misleading, as almost all the snags to be created are very small and of no value to wildlife. This problem is never addressed in the DEIS burning will not compensate for a loss of snags from logging.	Thank you for your comments.
5.20	19. Please define specifically how the unfinished Wildlife Conservation Strategy changes the management area direction for the project area, and how these changes are related to the proposed action.	This Project does not tier to the Wildlife Conservation Strategy Forest Plan amendment in any way. Wildlife conservation principals that were used in the analysis were taken from literature representing the best available scientific information. The different Management Prescription Categories within the project area can be found in Table 1.5-1 of the FEIS. The Forest is managing within the ranges described in Tables A-3 and A-5 which display desired conditions for size class and canopy closure by PVG (Forest Plan pg. A-3 and A-6 respectively).
5.21	20. The DEIS does not correctly identify habitat characteristics for elk during project activities, including habitat effectiveness and security by the current best science. This information needs to be provided to the public.	"Elk management" by the Forest is often misunderstood, or misinterpreted. The Forest Plan discusses "management strategies to address elk vulnerability to mortality, travel management impacts, and security needs" (Appendix E, page E-6). Vulnerability to mortality and travel management impacts in elk management both are functions of road density and the amount of roads that physically provide access by motorized vehicles. The 2003 Forest Plan does not

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		use the Elk Habitat Effectiveness Model, which was used in the 1988 Forest Plan for the Payette NF. Our current Forest Plan adopted the use of the "Hillis Paradigm" (Hillis et al. 1991), which suggests maintaining at least 30% "of an analysis area in nonlinear blocks of secure areas equal or greater than 250 acres and equal to or greater than 1/2 mile from motorized access". Applying this suggested elk security strategy in the Middle Fork Weiser River drainage is very difficult, due to the distribution and intensity of the 2007 Grays Creek Fire and the distribution and management of private timber lands in the same area. Elk habitat requirements are discussed in Section 3.4.5.6 of the FEIS, and include broad descriptions of seasonal habitat components, such as forage, mineral licks, wallows, hiding and thermal cover, calving areas, winter range, and travel corridors, road management, and security issues.
5.22	21. The DEIS is misleading in regards to the Federal Travel Management Rule. The minimum road system (MRS) is identified for the project, not for the Forest Plan. And it does not address how the MRS included an analysis of impacts on wildlife, including elk and snag associated wildlife, as well as fragmentation of old growth. These are forest resources that have to be included in development of a MRS. It appears that the various MRSs identified in the DEIS are based solely on timber management, not forest resources in general.	A discussion of how the MRS effects individual resources, as identified by alternative, is included in each resource section analysis in Chapter 3 of the FEIS.
5.23	22. The DEIS does not identify that the NEPA public involvement process has been completed for development of the Forest's MRS. The Travel Analysis Report for the Forest was never cited as well. It therefore is unclear as to how the Forest's MRS applies to this specific project area. Instead, it appears that the project is the basis for the MRS, instead of the Forest Plan.	The project level analysis involved the public and was completed prior to the Forest-wide Travel Analysis Process, hence the Travel Analysis Report not being cited for this project. The FEIS further refines the MRS as identified by alternative which utilized public involvement and commenting via the NEPA process. The final MRS is identified by the *Selected Alternative* in the Record of Decision.
5.24	23. The level of decommissioning of roads in the DEIS needs to clarify what level of decommissioning will actually occur. These levels will determine if future road use is planned or not. Without this information, the public is being mislead about the decommissioning process, and many of these roads will likely be put in "cold storage" for future logging activity.	The level of decommissioning per road is described by alternative in Appendix 2 of the FEIS. Definitions of each decommissioning treatment are provided.

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5.25	24. The DEIS did not identify any valid wildlife surveys for MIS or sensitive species. If key breeding/nesting areas are unknown, how can they be protected? The claims that they would be located prior to logging is a violation of the NEPA, because the public has no actual assurances that adequate surveys will be done, including survey methodologies.	The Payette conducts annual surveys for MIS, Sensitive wildlife species, and migratory bird species habitats on each Ranger District. MIS (white-headed and pileated woodpecker) surveys include the use of broadcast calls used at 10 points along established transects, with 300 meters between points. This sampling scheme was developed in conjunction with the Rocky Mountain Research Station (RMRS) approximately 10 years ago. RMRS research has continued to date on white-headed woodpeckers on the Council Ranger District, where the MFWR project is located. Additional MIS transects for white-headed and pileated woodpeckers have been added to the CFLR project areas to provide even more specific information for the areas affected by restoration activities. Similarly, Sensitive species transects are sampled annually for northern goshawks, flammulated owls, great gray owls, and boreal owls. Surveys for northern Idaho ground squirrels (Threatened), Canada lynx (Threatened), wolverine, fisher, and spotted frogs are specific to areas of modeled habitat. Field cameras also are deployed year-round in each project area to attempt to locate some of these species, by drawing them into baited sites. Our statement about locating species prior to implementation refers to the additional surveys we conduct on a site-by-site basis, to identify the presence of any of these species, just prior to, and during, restoration activities. These last surveys are in addition to all of the other surveys conducted over the past decade and concentrated during the planning phases of the proposed projects.
5.26	25. The proposed treatments in Riparian Conservation Areas (RCAs) lacks any actual scientific documentation that these treatments will promote riparian ecosystem function, including habitat values for both fish and wildlife. For example, what wildlife species will benefit from these thinning actions? What bull trout management guidelines recommends forest thinning in RCAs?	RCA vegetation treatments will apply to the outer half of the RCA in areas characterized by upland vegetation; thinning of these areas is consistent with the description of desired conditions in Appendix A of the Forest Plan. The objective is to move vegetation in these outer RCAs toward the desired vegetative conditions in the project area (see Section 1.5.1.1.3 and 1.5.1.1.4 and Appendix 6 of the FEIS).The 15-acre hand treatment area within the inner RCA of a perennial tributary to Mica Creek is proposed in Alternatives 2, 4, and 5. The objective of this treatment is to reduce the fire-prone understory of grand fir and other small diameter trees as a means of reducing the risk of crown fire. Wet meadow treatment is proposed in the outer half of RCAs under Alternatives 2 and 3. It includes both the inner and outer portions of RCAs in Alternatives 4 and 5. These hand treatments will be consistent with Forest Plan direction for protecting riparian and watershed function, and

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		opening up the understory will result in an increase in seral riparian species currently being shaded out in the area, including aspen and dogwood. There is no bull trout habitat in areas where thinning is proposed in RCAs. Bull trout and critical habitat only exist in the East Fork Weiser River. Neither exist in the Middle Fork Weiser River drainage. In general, the benefit of RCA vegetation treatments to wildlife is that by moving these stands closer to conditions within the Historical Range of Variability (HRV) of vegetation, the risk of crown fire and stand-replacement fire is reduced, thus increasing the chances of maintaining riparian and adjacent forested and non-forested stands farther into the future. The only wildlife species that fully benefits from these treatments is the white-headed woodpecker. Although other wildlife focal species, such as pileated woodpecker, northern goshawk, great gray owl, boreal owl, and flammulated owl, would likely have habitat altered in the short-term, they would realize improved-quality modeled habitat in the long-term (Section 3.4.6 of the FEIS).
5.27	26. What science clearly demonstrates that shaded fuel breaks will protect RCAs from future fire? What is the probability that a high intensity fire will actually burn across the proposed treatment area? Is this a reasonable probability to degrade the RCA with thinning? Why is it important to protect RCAs from fire, as well? This is never actually addressed in the DEIS.	The only area within the innerportion of an RCA proposed for thinning as part of the shaded fuel break is 15 acres within the Mica Creek subwatershed along two major Forest roads and is included in Alternatives 2, 4, and 5. Alternative 2 and 4 propose 52 acres in the outer portion of RCAs and Alternative 5 proposes 83 acres. Thinning would be accomplished by hand and in these areas and Project Design Features (FEIS Table 2.4-3) would be followed. These treatments are not intended to stop a fire, but to decrease fire intensity and provide safer access and egress for fire crews, and/or a place to engage a wildfire during suppression actions. Thinning can and does increase potential fire behavior in many forested conditions. Reducing ground, surface, and ladder fuels with fire in order to make a significant impact on fire behavior are imperative activities in reducing potential fire behavior. Thinning would decrease crown fire potential and promote fire resilient species.
5.28	27. The Payette National Forest has yet to reinitiate consultation with the U.S. Fish and Wildlife Service (USFWS) on bull trout critical habitat. As such, critical habitat cannot be impacted by management activities, including for the Middle Fork Weiser River Landscape Project.	The 2003 Revised Forest Plan included a biological assessment on critical habitat proposed by the USFWS in 2002. The USFWS concluded the Forest Plan would not destroy or adversely modify critical habitat in 2003. In 2004 the USFWS finalized critical habitat with no streams identified on the Payette National Forest. In 2009 FWS revisited critical habitat and designated streams

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		on the Payette National Forest as critical habitat in 2010. Although the 2002 critical habitat proposal was ultimately revised, on the Payette National Forest there is nearly a 75% overlap between the 2002 proposal that was analyzed in the Plan consultation and the 2010 final rule. Within the Middle Fork Weiser River Project Area both the Middle Fork Weiser River and East Fork Weiser River area were proposed in 2002 although dropped in 2004 when USFWS finalized critical habitat. In the 2010 final rule the East Fork Weiser River was designated as critical habitat. The 2010 critical habitat rule specifies the same nine PCEs initially established in the 2002 proposed designation and assessed in the 2003 Plan consultation, although in a different order and with slightly different wording. The Plan level consultation evaluated the impacts on the PCEs as designated in the 2010 rule. In short, the 2010 critical habitat rule does not constitute "new information" that reveals effects of the Forest Plan that may affect critical habitat in a manner or to an extent not considered in 2003. The 2003 Forest Plan Biological Opinion analyzed the impacts on the proposed 2002 critical habitat, which was arguably more extensive than the 2010 rule, and determined that the Forest Plan would not result in destruction or adverse modification of the proposed critical habitat designation. Given proposed critical habitat was proposed in 2002 and analyzed for the 2003 Forest Plan, reinitiation of consultation for the Forest Plan is not required.
6. Johnstone, Becky – Backcountry Recreation Club & Idaho Recreation Coalition		
6.1	Thank you for the opportunity to comment on the Middle Fork Weiser River Landscape Restoration Project. As you know, I am a member of the Payette Forest Coalition representing both the Backcountry Recreation Club and Idaho Recreation Coalition. The comments I am submitting today are my own. The organizations I represent and I support the recommendations of the Payette Forest Coalition.	Thank You for your comment.
6.2	The project area is in Idaho Fish and Game Hunt Management Area 32A, not 23A.	Thank you for bringing the error to our attention.
6.3	Page 65. There is heavy snowmobile use in the project area based on personal observations and personal conversations with members of the Donnelly Snowmobile Club.	Thank you for your comment and the information.

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6.4	Page 197. Table 3-28 Alternative 2 Total should be more than 6%.	The item has been checked and corrected if needed in the FEIS.
6.5	Page 411. There is no discussion of Alternative 2 road activities.	The item has been checked and corrected if needed in the FEIS.
6.6	Page 418. Alternative 2 should be bold to as are the other alternatives.	The item has been checked and corrected if needed in the FEIS.
6.7	Page 504. Unemployment in Adams County was above 25% and in Valley County was above 20% during the time period addressed by Figure 3-79 based on information from Idaho Department of Labor.	The item has been checked and corrected if needed in the FEIS.
6.8	Appendix 3, Page 17. Boise Cascade no longer owns property in the project area. Potlatch and Potlatch REIT purchased that property	The property has since been purchased by DF Development and has been updated in the FEIS.
6.9	Appendix 4, Page 13. The DEIS states that monitoring will begin in 2015 and will continue until 2015. I believe it should continue through the project activities and beyond.	Thank you for bringing the error to our attention.
6.10	How often and where within the project did Native Americans burn?	The Forest is aware of Native American use of fire on the landscape. However, we have not received any specific information regarding frequency or techniques used.
6.11	Are you trying to move towards the Historic Range of Variability or Desired Future Condition? Both terms are used in the DEIS.	The historical range of variability (HRV) is a term used in scientific literature to describe a range of successional stages that occurred historically. It is used in discussion to describe whether tree stands fall inside or outside of this range. The desired future condition (DFC) for vegetation in this Project are based on Appendix A, Tables A-2, A-3, A-5, A-7, A-8, and A-9 of the Forest Plan. These are the DFCs for forested vegetation from the Forest Plan that emphasize restoring and maintaining vegetation on all acres (MPC 5.1). This is a modification of the desired conditions specified in the Forest Plan for acres in the Project area that are within MPC 5.2 which emphasizes commodity outputs, particularly timber and production. Unlike the HRV the DFCs are an estimated point in time that were picked within the HRV and adopted for the Forest Plan. This is what the Project is actually managing for.
6.12	Non Commercial Thin - Plantations will leave 70-100 trees per acre. Is that the desired stocking rate? What is the percent mortality expected following prescribed burn? How old are the trees in the plantations?	Yes, it can be for small and sapling size classes - it is also PVG and site dependent which will change desired stocking densities. For example in MCCM the desired TPA retained after burning was 30 TPA. Prior to any prescribed burning in plantations, a silvicultural prescription will be developed which will

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	Will that affect their vulnerability to fire? Has that been factored in to the number of trees that will be left and their spacing?	determine what mortality we will strive to achieve. Trees in the plantations are currently 7-30 years old. Older saplings will be less vulnerable to mortality from prescribed burning. Expected mortality of saplings will be considered in prescription development.
6.13	BA/PA Burned Area/Plantations. The project will, "promote early seral species with variable densities." Will trees be clumped in the plantation stands or left with uniform spacing? What is the desired stocking level following fire?	The intent is to initiate the clump/gap appearance in the plantation with the prescribed burning. These plantations were initially planted at a 12X12 spacing (302 TPA). A plantation is typically certified after planting at 5 years if the stocking rates are generally above 100 TPA. Plantations which are burned will be burned in a way to achieve the desired condition in a silvicultural prescription.
6.14	Page 50. The stated preference to retain trees of high wildlife value may result in slightly higher than desired stocking. Is there a limit to how many trees may be retained for wildlife values?	See FEIS Appendix 7 – Legacy Tree Guide. See also project design features 58 and 59 in Table 2.4-7 in the FEIS.
6.15	How many whitebark pine trees do you expect to plant? How many acres?	There are between 800-900 acres identified for whitebark pine restoration. Number of trees planted will be dependent on blister rust resistant plants that can be propagated.
6.16	Page 59. Prescribed Fire Treatments. 24,250 acres over 15-20 years/ Does this account for any repeat burns? Can you burn this much acreage on a 5-10 year average?	The acres by alternative do not include repeat burns. The proposed activities intend to restore and/or maintain vegetation and fire regimes, thereby moving towards historic severities over 20 years of treatment this includes maintenance burns. The effects of our treatments would be graduated across the 20 years of treatments (i.e., as more thinning is accomplished there are generally more acres available for the application of fire). The Council Ranger District alone has applied an average of more than 3,000 acres of prescribed fire per year in the last 5 years across multiple project locations. It is expected that at least 2,000 acres of prescribed fire could be applied annually within the Middle Fork Weiser River project; some years may exceed 5,000 acres of prescribed fire. The Forest projects at least 2,000 acres of thinning will be completed per year. The ability to produce the intended result is expected to be high, but variability in year to year accomplishments are expected.
6.17	What level of decommissioning will occur on roads temp roads? Will any of these roads be needed for future management activities? Will that be taken into account when developing decommissioning prescriptions?	The level of decommissioning per road is described by alternative in Appendix 2 of the FEIS. Definitions of each decommissioning treatment are provided.

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6.18	If you did not include miles of road per square mile which Watershed Condition Class would each drainage fall in? I think there is too much emphasis being placed on miles of road per square mile.	The Watershed Condition Framework (WCF) includes road density (miles per square mile) because it is a valid measure of potential effects to watershed due to management; to remove roads and assess Watershed Condition Class would not represent existing condition and would not be consistent with WCF direction. Miles per square mile is also a measure used in the Forest plan to address effects to a number of resources including soil, water and wildlife. See section 3.5.1 of the FEIS for further discussion of road related impacts to watershed resources.
6.19	Page 343. Figure 3-58. Have similar events occurred in the project area? At similar scale? How much more frequently do these events occur following large fires?	Flood events have happened and will continue to happen periodically in the project area; the most frequent causes are as a result of summer thunderstorms and rain on snow events. There are several places in the project area that were impacted by the 2010 flood event (Figures 3.5-2 and 3.5-3 in the FEIS). This information is on file at the Council Ranger District in the form of damage assessment notes and photos collected after the 2010 event. Large fires that result in a reduction in vegetation within a drainage or watershed can increase the magnitude of peak flows following a precipitation event; this increase can magnify impacts to downstream infrastructure.
6.20	Page 365. Where were BMP's not implemented earlier?	Data collected during road condition surveys indicated that there were at least 5.5 miles of roads that did not have BMPs implemented. They were all ML1 roads.
6.21	Page 377. Travel Management Plan. How much of a reduction in sediment delivery to streams was realized with the prohibition of all motorized cross county travel? Has this been offset by the increase in mountain biking in the area? Would a decrease in sediment be realized by converting bike trails to motorized trails and increasing maintenance?	Sediment reduction realized through prohibition of cross-country motorized travel was implemented under the Payette National Forest Council and New Meadows Ranger Districts Snow-Free Season Travel Management ROD, February 2009 which was considered to be a cumulative effect for this project. No data has been collected specifically related to that decision. There is no data on file that indicates a recent increase in mountain bike use on trails within the project area, therefore the impacts of mountain biking on sediment were not analyzed.
6.22	Page 378. "Snow machines cause erosion and ground disturbances." There have you documented this statement?	This statement will be clarified in the FEIS.
6.23	Page 393. Physical barrier. Are these natural or man-made barriers? Is Mica Creek lacking LWD because of the Grays Creek Fire?	The Physical Barrier WCI is defined in the Forest Plan as man-made barriers present in the watershed (FEIS, page 398). The Mica Creek subwatershed may

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		be lacking in LWD because of a combination of road influences, activities on private lands, recreation and/or fuelwood gathering. A wildland fire that burned within RCAs would be expected to increase LWD recruitment as burned trees lose their root stability and fall.
6.24	Page 399. Table 3-95. FUR because of crossings not on National Forest land?	The Physical Barriers WCI is FUR (Functioning at Unacceptable Risk) because of man-made barriers on Forest Service land. FUR is defined in the Forest Plan as "Any man-made barriers present in the watershed do not allow upstream and/or downstream fish passage at a range of flows" USDA Forest Service, 2003, p. B-15).
6.25	Page 401. Table 3-97. Why are Jungle and Mica Creek FUR for LWD?	The Jungle Creek subwatershed is Functioning at Risk (FR) and the Mica Creek subwatershed is Functioning at Unacceptable Risk (FUR). LWD may be reduced particularly where roads are located in RCAs or where other past actions (timber harvest, recreation, fuelwood gathering and management actions on private property) have affected recruitable LWD.
6.26	Page 404. Why won't the culvert on Jungle Creek be replaced in Alternatives 2 and 4? It appears to connect approximately 0.5 miles of stream to the system below the existing culvert? What is the quality of habitat in the stream segment?	Implementation of the Jungle Creek culvert would reconnect approximately 0.5 miles of stream. The habitat in that stream segment supports both rainbow and brook trout. The Jungle Creek culvert replacement is not proposed in all alternatives because it was added in response to comments.
6.27	Page 410. Does Alternative 4 include the 15 acre fuel reduction site on the small tributary to Mica Creek proposed in Alternative 2?	Yes, Alternative 2 and 4 include this treatment.
6.28	Page 433. Where is the unit with >16% DD? What are the factors that cause the unit to exceed 16% DD?	The unit in question is located in Jungle Creek drainage at 116° 11’ 11.624” W 44° 42’ 27.26” N. Units on the high end of the DD range are the result of ground-based piling of slash using a bladed bulldozer. Recent salvage logging may have contributed as well.
6.29	Page 537. How much of the vegetation reduction resulted from discontinuing Native American burning in the area?	Vegetation as measured by ground cover and tree cover has not been reduced it has actually increased (See Fire history in Section 3.3.3 of the FEIS). The number of trees per acre, and cover of brush, forbs, and grasses have all increased since a fire suppression management strategy was adopted.
6.30	Page 538. Is there documentation that competition is greatest between elk and cattle and the level of competition? There are areas where cattle were excluded and elk also left the area as the quality of	The types of forage eaten by both elk and cattle overlap the greatest when compared with other ungulates in the Project area (deer) as they are both primarily grazers during snow free periods.

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	feed for elk was reduced. Cattle will feed on dead grasses and improve what is left behind and eaten by the elk.	
6.31	Appendix 2. Are all roads showing full recontour going to be fully recontoured?	Yes, all roads listed as full recontour will be fully recontoured. Roads listed for full recontour are roads identified in the field as requiring this treatment on the majority of the road prism in order to restore ecological function. However, if conditions on a section of road exist on the ground that will result in the most complete ecological recovery possible with a lesser treatment, it will be considered.
6.32	Earlier discussion in the DEIS indicates that spurs have been identified that may be retained for dispersed camping, trailer parking, etc. Is it possible to indicate which road sections are under consideration?	The FEIS (Page 65) states that "Roads identified for decommissioning located at the intersection with NFS open or seasonally open roads would be evaluated for site-specific dispersed recreational opportunities within 300 feet of the NFS road junction if no resource concerns are identified. The Forest Service will evaluate sites for motorized access via both spur road (see above, by leaving 300 feet or less of a decommissioned road as dispersed site access) and walk-in access from the main road. Because non-motorized dispersed recreational opportunities may be decreased, the Forest Service will evaluate a reasonable number of spurs and dispersed campsites specifically for walk-in sites, as resource conditions allow. For walk-in sites, the access route may be narrowed from a width of 14 to 16 feet to hiking trail standards or some intermediate width, based on on-site conditions." The roads proposed for decommissioning are identified in FEIS Appendix 1- Maps and listed in Appendix 2-Road Treatment Table. –Not all roads proposed for decommissioning will be suitable for dispersed camping, but they will be analyzed and considered prior to full decommissioning if they are located at a junction where the other road will remain open to motor vehicle use. If the road spur is found to offer a viable recreation opportunity without adverse effects to other resources, it will be left open and available for future dispersed camping use.
6.33	Appendix 3. Grays Creek 2008 and 2009 treatments. Were all of the treatments in the burned area?	The salvage treatments and replanting following the Grays Creek burn were all completed.
6.34	How large was the MF Blowdown?	The Middle Fork blow down is described in FEIS Appendix 3 Cumulative Effects.

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6.35	Appendix 4. Page 27. Will CWD be monitored following prescribed burns?	Per the proposed monitoring plan, Coarse Woody Debris (CWD) will be evaluated after vegetation management activities have concluded. There is currently no plan to monitor CWD after prescribed burns.
6.36	Appendix 5. Page 1. Is Alternative 4 the only alternative that treats inner and outer RCA's of wet meadow aspen stands? This should be expanded to the final preferred alternative.	Alternative 4 proposes to treat about 203 acres of aspen within one site potential tree height and about 3,624 acres of vegetation treatment and prescribed burning within RCAs. Thank you for your comment.
6.37	If we had more sagebrush/bitterbrush range would there be less movement of ungulates to private property during the winter months?	Winter range is more a function of elevation than plant community. Elk winter range exists in the Project area, primarily depending on snow depths at lower elevations in sagebrush/grasslands that dominate the western foothills, including the lower areas of the MFWR and Fall Creek drainages (See Figure 3.4-14 on pg. 263 of the FEIS). This habitat abuts large acreages of private land including much of the Weiser River Valley.
6.38	The elk populations in this area are vastly above HRV. This affects the whitetail and mule deer populations.	Elk populations in the Project area exceed Idaho Department of Fish and Game's management goals. Elk hunting seasons are set with associated harvest goals through hunting regulations to manage the population.
6.39	Are wolves a primary driver of ungulates towards lower elevation private property? How do we improve ungulate hiding cover in close proximity to feed? Wolves neither observe hunting seasons or road closures. This area is already above target elk populations.	Snow depth is the primary driver for ungulates to seek lower elevations as winter range. By treating nonforested areas with conifer removal and prescribed fire (meadow restoration) it should provide more forage adjacent forested stands that provide hiding cover.
6.40	Increasing elk security areas and potentially increasing the elk population creates a hardship on neighboring property owners. The number of elk on private property has increased significantly over the past 10 years.	The intent of managing for elk security areas is not to increase elk populations. Elk populations are managed by Idaho Department of Fish and Game; the Forest Service manages the habitat supporting those populations on Federal land. Managing for elk security is suggested by the Forest Plan, which requires the Forest to coordinate elk habitat management with the population goals set by the State. Currently, Idaho Department of Fish and Game still suggests that the Forest manage for elk security in the MFWR drainage.
6.41	Does hiding cover from wolves differ from hiding cover from humans?	Hiding cover was defined by Thomas et al. (1979) as "vegetation capable of hiding 90% of a standing adult deer or elk from the view of a human, at a distance equal to or less than 60 meters (200 feet). The FEIS did not analyze for hiding cover but rather elk security areas. See FEIS Section 3.4.5.6. However, for an elk security area to be fully functional, it should have vegetation and/or terrain features that provide hiding cover over 20-30% of the security area.

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6.42	Elk security zones are vastly underrated. They are estimating a ½ miles line of sight from roads. This does not occur in most of the project area.	Elk Security Areas (SAs) (Hillis et al. 1991) are often used as a measure of the effects of road density on bull elk vulnerability to hunting mortality. An area of 0.5 mile on either side of an open NFS road or motorized trail is considered unsecure. This is not to say that an elk can be seen within the 0.5 mile buffer, only that they are unsecure.
6.43	Very young trees are less fire resistant than older trees. At what age do Douglas fir, ponderosa pine, larch and aspen become less susceptible to death following prescribed fire?	While older conifers have thicker bark and are more resistant to fire caused mortality, age is not the dominant determinant of mortality in Douglas fir, ponderosa pine, and larch following prescribed fire. Other factors such as canopy base height, crown spacing, fire intensity and fuel loading are the key factors. Prescribed burning generally follows pretreatments that increase canopy base height/crown spacing while decreasing fuel loading which intended to reduce fire intensity. This in turn reduces mortality in Douglas fir, ponderosa pine, larch following prescribed fire. The actual size of a tree at a given age depends on site conditions where the tree is growing. An age at which a tree is less susceptible to fire caused mortality is hard to determine and may have no clear answer. Instead the conditions when the fire is burning and the surrounding fuel loads determine the susceptibility to mortality. Prescribed fire in aspen is designed to cause mortality since research has proven that removing the overstory increased regeneration of aspen.
6.44	Lodgepole pine is very susceptible to death by fire. 25% scorched bark usually results in mortality. If mortality doesn't result from direct fire effects, it often results from greater susceptibility to bark beetles. How will you manage fire in lodgepole pine stands to avoid excess mortality?	Approximately, 903 acres (2%) are PVG10 (persistent lodgepole stands) of which have components of aspen, lodgepole, whitebark pine, douglas fir, and Englemann spruce which are all considered early seral or trace species in this vegetation type. Whitebark pine and aspen restoration treatments will be priority where present. Additionally, research indicates the level of fine fuels increases bark scorch/mortality while daily temperature and wind speed will decrease mortality in lodgepole pine (Agee 2007). Additionally, Kilgore and Curtis 1987 stated that prescribed burning has the best results with a backing strip head fire in the Fall and Spring if fine fuels are not present.
6.45	Lodgepole pine seedlings are very susceptible to death from rusts. They need large openings to allow sunlight and wind to dry the seedlings before rust can penetrate their bark. How do you plan to create adequate openings to encourage the growth of lodgepole pines?	Thank you for your comment. Due to the maximum size of openings of 10 acres is expected that rust will continue to occur within the lodgepole pine regeneration. Additionally, ponderosa pine, whitebark pine, spruce, Douglas fir, aspen, and larch are preferred species over lodgepole pine; therefore, mortality in lodgepole may help favor preferred species

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6.46	Appendix B. Page 2 PVG 10. What is the average life span of lodgepole pine in the project area? What is the primary habitat for snowshoe hares in this area? Will we be improving hare habitat? Page 4. What is TEST15?	Lodgepole pine (PVG 10) within the MFWR project area is either persistent lodgepole and dominant seral - the average life span of both are 100-200 years (Pfister and Daubenmire 1973) As stated in the 2013 Lynx Conservation Assessment and Strategy handbook (LCAS, Interagency Lynx Biology Team 2013), "Cover types that support snowshoe hares in this region include Engelmann spruce, subalpine fir, mixed spruce-fir, mixed aspen and spruce-fir, and mixed lodgepole pine and spruce-fir, and lodgepole pine." "Herbaceous foods (deciduous shrubs and other leafy greens) are selected when available during spring through fall. Hares switch to woody browse (branches, twigs, small stems, and evergreen needles) during the winter in response to snow depth and changes in available food sources." We will be improving hare habitat by opening up stands and allowing more light into the understory, the food sources (shrubs, primarily willow) for snowshoe hares should increase. Page 4. TEST15 is located in the Forest Plan, p. III-123, under Management Direction for Threatened, Endangered, Proposed, and Candidate Species - Standards. TE stands for Threatened and Endangered, ST stands for Standard. Forest Plan Standards are required management activities. TEST15 discusses the "30% Rule" for lynx management, following the 2000 LCAS, which states that if more than 30% of lynx habitat (in a LAU [Lynx Analysis Unit]) is currently in unsuitable condition, no additional habitat may be changed to unsuitable habitat as a result of vegetation management. However, in the 2013 LCAS, which is the best information available and the document the Forest Service, Idaho Fish and Game, and USDI Fish and Wildlife Service use as the framework for managing lynx in this area, the 30% Rule does not apply to our area, because the Payette NF is considered to be Secondary Lynx Habitat. In Secondary habitat, LAUs are not used, so the 30% Rule does not apply, and the lynx habitat is to be managed to promote a mosaic of habitat structure to support populations of both snowshoe hares and lynx.
6.47	Is any of the potential lynx habitat in WUI? Lack of treatment in potential lynx habitat will impact the spread of fire into WUI.	By definition, no WUI areas actually occur in the Project area. Adams County has included areas in the eastern part of the Project area on their Fire Mitigation Map due to values at risk in the Tamarack area. Snowshoe hares are present in the Project area, but populations were not assessed for this Project.

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	The number of snowshoe hares is of prime importance to suitable lynx habitat. Is this area at, below or above the desired number of snowshoe hares?	Snowshoe hare population management generally involves vegetation management that provides an understory of shrubs in forested stands, or shrubfields in non-forested sites. In most areas, willow (*Salix* spp.) are the preferred shrub species, the hares feed on the bark and cambium.
6.48	All road miles are counted the same. 2-wheel motorized trails are treated the same as 2 lane, poorly maintained routes. This should be disclosed in the discussion about miles of roads in the project area.	National Forest System Roads are considered different from other roads and trails in the project area from a management perspective. Other resources may consider the effects to be the same depending on the resource. See Chapter 3 in the FEIS by resource for analysis of roads versus trails.
6.49	Firewood gathering opportunities should be maximized wherever possible within the project area.	Firewood opportunities will be assessed throughout the project area.
6.50	Please explain the use of indicator species. The DEIS keeps stating that white headed woodpecker habitat will be improved. The goal of the project is not to improve to white headed woodpecker habitat. The goal of the project is to improve habitat for a range of species. White headed woodpeckers will be used to measure how well this improvement has been attained since they are a species very tied to large ponderosa pine habitat. I hear a lot of complaints from people who do not understand why we are improving habitat for a species for which this is the far eastern edge of their range. They would prefer improving elk habitat so that their hunting success can be improved. They do not understand that elk are generalists and can survive in many habitat types. I think a better explanation of the habitat type that is being restored will help people better understand what you are trying to accomplish with this project.	A management indicator species is presumed to be an indicator of the welfare of other species using the same habitat. The condition and welfare of these species can be used to assess the impacts of management actions on particular areas or habitats. The white-headed woodpecker is a Region 4 Sensitive species, a PNF MIS, and an IDFG species of greatest conservation need. The white-headed woodpecker is a regional endemic species of the Interior Northwest and may be particularly vulnerable to environmental change, because it occurs in limited distribution, with narrow habitat requirements in dry conifer forests. The white-headed woodpecker was selected as a focal species for Habitat Family 1, because it is believed to represent the Key Ecological Correlate and Key Ecological Function of this family. In the Forest Plan, Wildlife Resources Objective 0337 for Management Area 3 (Weiser River) directs the Forest to “increase white-headed woodpecker habitat by managing ponderosa pine stands” within different vegetation groups to move toward desired conditions. In wildlife management, providing habitat for one species may lead to short-term negative impacts to other species.
6.51	Log landings within 300' of roads should be analyzed for dispersed camping potential prior to decommissioning where dispersed camping is allowed. These sites are generally quite level. Snags have been removed due to OSHA regulations, a hardened surface is in place and trees have been thinned. Many provide ideal locations for group camp sites away from RCA's. The log landing we frequently stop at on Mill	Log landings within 300 feet of roads that would remain open to motor vehicle use after project implementation, and which could remain open to dispersed camping using a motor vehicle up to 300 feet off the road, will be analyzed for dispersed camping where they offer a beneficial recreation opportunity. If no adverse effects are determined, the site would be a candidate for a dispersed

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	Creek field trips would have been the ideal dispersed camp site if it would have been left in place following logging.	recreation site. Log landings are not identified during the NEPA process but instead during the contract phase of the project during implementation.
6.52	You should look at the potential for a pole sale in the project area. Where poles were harvested prior to WUI treatments in the Secesh area net costs were reduced and far less vegetation had to be burned. Less smoke was generated.	Post and pole sales will be considered in MFWR.
6.53	Please try to schedule burns so as not to adversely affect grazing permittees.	Prescribed fire managers will work with the Range Specialist on timing of prescribed fire.
6.54	I understand, logistically, why most burning will occur in the spring. Historically, Native Americans burned in late fall. Will you be shifting species? How will desired species react to spring vs fall burning? Will you do any monitoring of reproductive point emergence prior to spring burns? This can drastically impact seed production if the reproductive points have emerged prior to burning.	Spring burns are accomplished during the dormant season, following snow melt and have resulted in less than 10% tree mortality for trees greater than 6 inches in DBH. Primary carriers of fire in the spring are ponderosa pine needles and dead grasses and forbs in unthinned areas and slash in thinned areas. Generally, fire will not carry outside of stands dominated by ponderosa pine. Spring burning timeframes are dependent on site specific conditions, but typically happen in April and May, prior to or during green-up (dormant season). We have seen very good response in our grasses immediately after spring burn. We will be monitoring burned areas for response but don't expect a species shift.
6.55	Road miles for decommissioning should not be approximate. No roads not listed in the EIS should be decommissioned without further opportunity for public input.	The total road miles for decommissioning are approximated to the nearest tenth of a mile. Each individual road to be decommissioned is depicted on project maps and mileages are listed in FEIS Appendix 2, Table 1. Roads that have not been analyzed as part of one of the alternatives would not be considered for decommissioning as part of the decision.
6.56	Driveable dips are preferable over water bars.	Thank You for your comment.
6.57	Page 121. Routes should be open to snowmobiles between Christmas and New Year's Day. Snowmobile use in the area is especially high during that time period and is very important to the economy of Council, and the Donnelly area. You may not see many snowmobilers starting from the Council side, but there are large numbers coming into the area from the Donnelly side.	The Recreation PDF (#66) that discusses the use of groomed snowmobile routes for haul routes will be amended to add on groomed snowmobile routes within the Project Area to be used as haul roads during project implementation (which could include: 165, 185, 245, 186, 218, 692, 186, 206 (reference the 2016 Winter Travel Map)), the contractor would be required to leave a 6 inch snow floor during snow plowing operations and leave the berms far enough apart for passage with a snow groomer. No hauling would be

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		allowed on weekends or holidays between December 15 and April 1. No hauling would be allowed between Christmas and New Year's Day.
6.58	Page 363 Sediment reduction doesn't take into account reducing risk to large fires which would result in large releases of sediment.	Reducing risk of large fires is analyzed in the Fuels Resource section of the FEIS. The Watershed Resource section includes only an analysis of sediment reduction for actions that would be taken with the project under the various alternatives. Reduction of the chronic input of sediment from roads is possible because the current amount of sediment, on average, per year can be quantified through modeling and data collected on the ground (in this case, GRAIP and GRAIP Lite). Quantifying sediment contribution from a theoretical large fire would be problematic as there are an almost infinite number of scenarios involving burn pattern, location, severity/intensity, and precipitation patterns for the period following fire prior to revegetation.
6.59	Page 382. Proposed vegetation treatments should be structured to have little to no effect on LWD. Treatments are occurring 1-2 tree lengths from streams. Since we are increasing tree size in the long term and are decreasing risk from large, higher intensity fires, there should be a positive movement in LWD.	Proposed treatments have been designed with large woody debris taken into account, as required by the Forest Plan Appendix B.
6.60	Please consider treatments in current LAU's. There will be a 40-60% reduction in acres actually treated vs acres proposed for treatments. If there is only a 40% reduction in acres treated the project will be within 2% of the vegetation coverage recommended by the 2000 Canada Lynx Conservation Assessment and Strategy. This is statistically insignificant and there will most likely be a higher reduction in the number of acres treated.	The analysis for effects to modeled lynx habitat within the Middle Fork Weiser River LAU is for the maximum expected impacts from vegetation management. The number of acres not treated due to resource concerns is an unknown and cannot be assessed through this analysis.
6.61	Roads that might be used in Alternative 4 and decommissioned following treatment should not be obliterated until treatments can be accomplished. It Alternative 4 treatments are not completed as a part of this project, leave the roads in place. You may be able to accomplish the treatments in the future when the 2013 Canada Lynx Strategy is adopted.	Thank You for your comment.
6.62	Road 198 should remain open to motorized travel from Cabin Creek. It is a historical route, leads to other trails and is a historically important route of travel both for recreation and grazing permittees.	Trail #198 would remain open, and rerouted around private land to provide a legal access point for recreational users.

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6.63	The value of Elk Security Areas should be reevaluated. I realize this is the job of Idaho Department of Fish and Game. Hunters who have spent many years hiking in the project area state that there are as many elk outside the locked gates as behind the locked gates. IDF&W should be made to prove that they are improving elk security before more roads are closed to hunters. There should be more provisions made to allow access for handicapped hunters to access the areas behind locked gates. Elk security areas are vastly underrated. You are assuming a ½ mile line of sight from roads which elk can be spotted in. Even if you can spot elk ½ mile away, how many can shoot an elk at that distance? You cannot see past the ridge nearest the road. You cannot see ½ mile through the existing vegetation. A half mile is a very long distance to sneak up on an elk. There needs to be a more scientific evaluation of what constitutes elk security.	Thank You for your comment.
6.64	As you are fully recontouring roads, please keep in mind that many of the trails and roads in our area started out as game trails. As you are blocking passage to man, you are also blocking passage to wildlife. If too much debris is left on former roads and trails you will be forcing wildlife and people out of areas.	Decommissioned roads are left passable topeople, wildlife, and livestock. Thank you for your comment.
7. Littleton, Christine – U. S. Environmental Protection Agency, Region 10		
7.1	The EPA is supportive of the overarching goals and objectives of the proposed project, and we find the DEIS to be clear, well organized, and robust. We support the collaborative landscape restoration approach and appreciate the Forest's responsiveness to issues raised during scoping. We agree with the design of RCA treatments and the riparian guidelines outlined in Appendix 5. Overall, we find the treatments proposed under Alternatives 2 to align with the broad body of science emerging about dry and moist mixed conifer forests[1] [1] http://www.fs.fed.us/pnw/publications/MMC _Synthesis_ 21Nov 13.pdf	Thank you for your comment and support.
7.2	We also recognize the Forest's focus on improving hydrologic condition within the project area. We commend the Forest for utilizing on the	Thank you for your comment. Alternative 3 was developed to address concerns regarding soil, water, riparian and aquatic resources, and wildlife

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	ground survey protocols for use in the Geographic Road Analysis and Inventory Package (GRAIP) and the rapid assessment GRAIP Lite tool to help prioritize sediment related work. We note that Alternative 3 emphasizes watershed restoration by including fewer vegetation treatments and decommissioning a greater number of upland roads and roads within RCAs- 87.9 miles and 26.2 miles respectively. While we support the activities proposed under Alternative 2, we recommend considering decommissioning roads comparable to the watershed restoration alternative to further reduce sediment loading. Additionally, the DEIS includes modeled sediment loading per subwatershed. In order to quantitatively assess the benefits to long-term water quality, it would be useful to include the predicted sediment reduction by each alternative in the EIS. This information would allow the public and decision makers to better compare and contrast water quality measures under each alternative and determine which measures best promote desired aquatic/riparian conditions.	concerns, and is intended to be a more effective watershed restoration alternative. In the Record of the Decision, the Responsible Official will document his/her rationale for the elements of the selected alternative. Effects to all resources, compliance with laws, regulations, and policies, tribal consultation, and public comments will be considered.
7.3	Based on our review, we are rating the DEIS as LO (Lack of Objections). We support the collaborative, science-based ecosystem restoration of priority forest landscapes consistent with the purpose of the Collaborative Forest Landscape Restoration Program. We also support the Forest's continuing engagement of the Payette Forest Coalition on this project.	Thank You for your comment.
8. Murphy, Dennis – Payette Forest Coalition		
8.1	The members conclude that the alternative can be improved by addressing the topics below in the FEIS:	Thank you for your comment. Your suggestions have been considered in the FEIS. The development of Alternative 5 for the FEIS was in response to public comment to the DEIS and IDT recommendations to maximize important restoration treatments. See FEIS Section 2.2.5 for description of Alternative 5.
8.2	The Coalition supports vegetation treatments in the higher level PVGs, specifically the acres treated by the Free Thin-Patch Cut-Modified Shelterwood prescription, when there is an ecological or fuels management benefit.	Thank you for your comment.

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8.3	In order to document the ecological benefit, the FEIS should include references to recent research that characterizes patch and pattern[1]. Since quantitative historical data may not be available, we encourage incorporating qualitative descriptions of differences between historical and current landscape pattern. Interdisciplinary Team presentations to the PFC that compared historical and recent aerial photography are a reasonable source for the description of qualitative differences.	Analysis of aerial photos has been incorporated to assess patch and pattern.
8.4	[1] Hessburg, PF et al, Restoring fire-prone Inland Pacific landscapes: seven core principles, Landscape Ecology, Volume 30, Issue 10, pp 1805-1835.	A review of presented references and how they were considered in the project is contained in the Middle Fork Weiser River Landscape Restoration Project-Appendix 10: Response to Comments - Literature and Opposing Views.
8.5	Alternative Two as proposed would potentially change 25% of suitable lynx habitat to an unsuitable condition. The Coalition supports incorporating additional treatments proposed in Alternative 4 that would affect up to 30% of the source lynx habitat. Priority treatments from Alternative 4 are those which address restoration of white-bark pine, aspen, or create fuel breaks to reduce hazard.	Thank you for your comment.
8.6	The forthcoming designation of the Tamarack Resort WUI[2] by Adams County is an important factor to consider in the selection of acres for treatment to create fuel breaks.	Tamarack Resort WUI2 is considered in all Action Alternatives except Alternative 3.
8.7	[2] Tamarack WUI General Description: the lands lying east of the 218 Road (Jungle Creek Primary) to the Adams County line, then proceeding south to the Mica Ridge area. Exact boundary will be defined at the Adams County Fire Mitigation Plan meeting on April 7, 2016.	Thank You for your comment.
8.8	We further recommend that the FEIS acknowledge that the effectiveness of the treatments in these Potential Vegetation Groups will be evaluated as part of the CFLRP Ecological Indicator	Thanks you for your comment.
8.9	We recommend that the selected alternative include mitigation actions to offset losses to elk security.	We are using the Hillis Paradigm for managing elk security areas. According to Forest Plan requirements, the security areas and road access management are designed to reduce the vulnerability of bull elk to hunting mortality during the fall high-powered rifle hunting season. This process is based on reducing road access to security areas, which are identified as the polygons created after a

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		1/2-mile buffer is applied to all "drive-able" roads. We work with the PFC, the public, and IDFG to identify roads that might be closed, at least seasonally, to provide for larger acreage and numbers of elk security areas in the Project Area. The elk security areas should be at least 250 acres in size and total at least 30 % of the Project Area. In the MFWR Project Area, creating elk security areas has been problematic, because of the amount of the habitat in the area that was altered from the Grays Creek Fire in 2007, the large amount of private land inholdings, and the location of main arterial Forest System roads that are needed for resource management in the drainage. We will continue to identify roads for potential closure as we work on this project.
8.10	In addition, include elements from Alternative 3 that would expand the spatial distribution of elk security areas in the project area, even if the patches created are less than 250 acres.	Thank you for your comment.
8.11	The Payette Forest Coalition appreciates the work of the Interdisciplinary Team on the design and analysis of the project. We look forward to successful implementation and monitoring.	Thank You for your comment.
9. Nelson, Marla - Wild Earth Guardians		
9.1	Guardians has a long history of promoting restoration and protection of wild places to reconnect habitats and support thriving ecosystems on our National Forests. We are very encouraged to see the Payette National Forest considering ecosystem restoration on a large scale to address many of the factors that continue to degrade ecosystems. In general, Guardians supports ecosystem restoration. This is especially true for the plan components that address water quality and aquatic habitats, improve watersheds and forest resiliency, and reduce overall road density by returning expensive and deteriorating forest roads to the wild.	Thank You for your comment.
9.2	We are also very supportive of the Forest Service's analysis that incorporates the Payette National Forest's Travel Analysis Plan (TAP). The Forest Service faces with its oversized and under- maintained road system. In turn, decommissioning forest service roads and unauthorized roads to close the gap between current funding and	Thank You for your comment.

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	maintenance needs, and also to prevent further soil and water degradation is a necessary step forward. We strongly support these actions.	
9.3	We do, however, have several concerns about the project and analysis in the DEIS. First, it is unclear why this particular watershed is at the top of the Forest Service's priority.	The Middle Fork Weiser River Project area is contained completely within the 800,000 acre Weiser-Little Salmon Headwaters Project (WLSH) which was accepted in the Collaborative Forest Landscape Restoration (CFLR) Program in 2012. The CFLR Program was established with the Omnibus Public Land Management Act of 2009, PL 111-11, and has a time limit for use of funding of 2019. Projects within the WLSH area are priority in order to utilize funding from the CFLR Program. Originally the Middle Fork Weiser River project and the Mill Creek Council Mountain project were both part of a larger 100,000 acre project area. It was decided that for analysis purposes it would be more practical to break the project area into two 50,000 acre projects. Mill Creek Council Mountain was completed first and the Middle Fork Weiser River was the next logical project area for the Council Ranger District. This is the reason the Middle Fork Weiser River watershed is a top Forest priority.
9.4	Second, we urge the Forest Service to identify the Minimum Road System in this NEPA analysis.	A minimum road system will be identified for the project. See FEIS Section 1.9 for Decisions to be Made and the Minimum Road System discussions for each resource section in Chapter 3 of the FEIS.
9.5	Third, the Forest Service must provide assurances that the temporary roads proposed under this project will in fact be temporary	All temporary roads used in this project will be decommissioned and fully recontoured. The decommissioning of temporary roads will be part of the timber and stewardship contract. All items are approved by the sale administrator in order for the operator to get paid. This will ensure that temporary roads do in fact get decommissioned upon project completion.
9.6	Fourth, the agency should provide clear standards for vegetation treatment.	Thank you for your comment.
9.7	Fifth, the agency needs to ensure protection of lynx habitat.	The FEIS identifies the three Lynx Analysis Units (LAU) within the Project Area. The only LAU that is analyzed is the Middle Fork Weiser River LAU because the other two have very few acres in the Project area. The Forest is considered a secondary area for lynx conservation in both the 2000 and 2013 LCAS. The Project is consistent with the 2013 LCAS conservation measures for vegetation management in secondary areas.

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9.8	Fifth, the Forest Service should do more to ensure elk security.	We are using the Hillis Paradigm for managing elk security areas. According to Forest Plan requirements, the security areas and road access management are designed to reduce the vulnerability of bull elk to hunting mortality during the fall high-powered rifle hunting season. This process is based on reducing road access to security areas, which are identified as the polygons created after a 1/2-mile buffer is applied to all "drive-able" roads. We work with the PFC, the public, and IDFG to identify roads that might be closed, at least seasonally, to provide for larger acreage and numbers of elk security areas in the Project area. The elk security areas should be at least 250 acres in size and total at least 30 % of the Project area. In the MFWR Project area, creating elk security areas has been problematic, because of the amount of the habitat in the area that was altered from the Grays Creek Fire in 2007, the large amount of private land inholdings, and the location of main arterial Forest System roads that are needed for resource management in the drainage.
9.9	And finally, the agency needs to consult under the Endangered Species Act as to the impacts of this project on listed species and their critical habitat.	As required by the Endangered Species Act, the Forest will consult with USDI Fish and Wildlife Service (FWS) on the MFWR CFLR project effects to Canada lynx and northern Idaho ground squirrel, as presented in the Wildlife Section of the Fish and Wildlife Biological Assessment for the project. There is no critical habitat designated on the Forest for either of these species. Once our fish and wildlife analyses are completed for the Final EIS, our Biological Assessment will be finalized and presented to the FWS and the National Marine Fisheries Service (NMFS), initiating our consultation with the regulatory agencies.
9.10	**I. The Forest Service should clearly explain why the Middle Fork Weiser River is a top priority project for the Payette.** The Forest Service should clearly articulate the statement of purpose, and provide support for the claimed need. The Council on Environmental Quality (CEQ) regulations implementing the NEPA explain that the statement of purpose and need "shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action." 40 C.F.R. § 1502.13. An accurate statement of purpose and need is central to crafting an adequate EIS because it will provide the guideposts for the analysis of the proposed action, alternatives, and effects. 40 C.F.R. § 1502.13.[1] Because the statement of purpose and need sets the stage	The Middle Fork Weiser River (MFWR) Landscape Restoration Project is part of a larger Weiser-Little Salmon Headwaters (WLSH) Project area. This is an 800,000 acre area that was accepted into the Collaborative Forest Landscape Restoration Program (CFLRP) in 2012. This program provides funding for implementation of forest restoration treatments at the landscape level. In order to utilize this funding source the Payette National Forest has been doing environmental analysis of restoration projects on smaller landscapes within the WLSH area. The MFWR was originally part of a larger analysis area within the WLSH area which included the Mill Creek-Council Mountain (MCCM) Project Area. During the initial stages of project planning the original MCCM analysis area was split in half deferring analysis on the MFWR area to a later date. The MFWR was the next scheduled restoration analysis area on the

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	for the range of alternatives an agency must examine, it must not be so narrow as to artificially limit the alternatives considered. See, e.g., *City of Carmel-by-the Sea v. U.S. Dep't of Transp*., 123 F.3d 1142, 1155 (9th Cir. 1997). [1] See also, e.g., CEQ, Letter to Secretary of Transportation Mineta (May, 2003) (stating that "[t]houghtful resolution of the purpose and need statement at the beginning of the process will contribute to a rational environmental review process and save considerable delay and frustration later in the decisionmaking process."), available at http://ceq.hss.doe.gov/nepa/regs/CEQPurpose2.pdf. The Forest Service explains the purpose of the project is to move vegetation and subwatersheds toward desired conditions, manage recreation use, contribute to the economic vitality of adjacent communities, and improve firefighter and public safety. DEIS at 19. The Forest Service explains that the need for this project is the different between current and desired conditions. DEIS at 20. But the same could be said for any number of watersheds across the Payette National Forest. And here, the high road densities on adjoining private lands means the Forest Service will not be able to achieve its goals for road density standards. *Given the various needs across the Payette National Forest, why did the Forest Service choose this location for its next priority focus?* The Forest Service states that restoration of subwatersheds is based on the amount of NFS land within each one. DEIS at 62. It goes on that because road density and disturbance in RCAs "are present in relatively equal proportions within each subwatershed," those with the higher percentage of NFS land will get higher priority. *Id*. *Does the Forest Service take the same approach when prioritizing projects among watersheds?*	Council Ranger District. In both the MCCM and MFWR areas due to the past management actions there is higher than desired road densities and the vegetation is departed from the desired conditions. See Section 1.1 Introduction, for the purpose of CFLRP and collaboration with the Payette Forest Coalition (PFC). The need for restoration is driven by the departure from desired conditions.
9.11	**II. As part of its NEPA analysis, the Forest Service must identify the Minimum Road System.** The impacts from roads to water, fish, wildlife, and ecosystems are tremendous and well documented in scientific literature. As noted	The MRS is the network of system roads needed to manage and administer the National Forest System Lands. A MRS will be evaluated and decided for this project area. Changes to the MRS may occur in the future, but must go through the NEPA decision making process. See FEIS Section 1.9 for Decisions

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	above, we are pleased to see the Forest Service incorporating the Payette National Forest's TAP in its analysis and development of the road treatments proposed here. The 2013 TAP, however, provided only a recommended Minimum Road System (MRS).[2] DEIS at 480. Given that is landscape restoration project is considering changes to a large number of miles of roads, and given its large geographic scale, this is precisely the type of project where the Forest Service must identify the MRS. We urge the Forest Service to carefully evaluate the proposed project and its alternatives through this lens. This type of large-scale project is the perfect opportunity to begin making on-the-ground progress towards an economically and environmentally sustainable road network. [2] 36 C.F.R. § 212.5(b)(1) ("For each national forest . . . the responsible official must identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands.").	to be Made and the Minimum Road System discussions for each resource section in Chapter 3 of the FEIS.
9.12	*Identify the Minimum Road System* To address its sustainable and deteriorating road system, the Forest Service promulgated the Roads Rule (referred to as "subpart A") in 2001. 66 Fed. Reg. 3206 (Jan. 12, 2001); 36 C.F.R. part 212, subpart A. The Roads Rule created two important obligations for the agency. One obligation is to identify unneeded roads to prioritize for decommissioning or to be considered for other uses. 36 C.F.R. § 212.5(b)(2). Another obligation is to identify the MRS needed for safe and efficient travel and for the protection, management, and use of National Forest system lands. Id. § 212.5(b)(1).[3] The MRS is the road system, determined by the Forest Service, as needed to: * Meet resource and other management objectives adopted in the relevant land and resource management plan, * Meet applicable statutory and regulatory requirements, * Reflect long-term funding expectations, and * Ensure that the identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance.	A Minimum Road System (MRS) was evaluated in the analysis of the Middle Fork Weiser River project. The recommended MRS was identified using the Travel Analysis Process (TAP) that was completed in 2013 for the project area. During the TAP the IDT recommended an MRS by identifying the roads needed for the protection, administration, and utilization of the NFS lands and the use and development of their resources. Each action alternative deals with the long term status of the identified MRS but in slightly different ways. The MRS will be the NFS road system identified by the *Selected Alternative* in the Record of Decision. See FEIS Section 1.9 for Decisions to be Made and the Minimum Road System discussions for each resource section in Chapter 3 of the FEIS.

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	Id. (hereafter, MRS factors). See also Memorandum from Leslie Weldon to Regional Foresters et al. on Travel Management, Implementation of 36 CFR, Part 212, Subpart A (Mar. 29, 2012) (hereafter, 2012 Weldon Memo). The goal of subpart A is "to maintain an appropriately sized and environmentally sustainable road system that is responsive to ecological, economic, and social concerns."[4] [3] In promulgating its rules, the Forest Service indicated that "[t]he requirement to identify roads for decommissioning is '[e]qually important' as the overall identification of the minimum road system." Center for Sierra Nevada v. U.S. Forest Service, 832 F. Supp. 2d 1138 (E.D. Cal. 2011) (quoting 66 Fed. Reg. at 3207). [4] See 2012 Weldon Memo at 1 ("The national forest road system of the future must continue to provide needed access for recreation and resource management, as well as support watershed restoration and resource protection to sustain healthy ecosystems."). See also Memorandum from Joel Holtrop, U.S. Forest Service Washington Office, to Regional Foresters et al. (Nov. 10, 2010) (hereafter, 2010 Holtrop Memo) ("Though this process points to a smaller road system than our current one, the national forest road system of the future must provide needed access for recreation and resource management and support watershed restoration and resource protection to sustain healthy ecosystems and ecological connectivity."). The Forest Service's Washington Office has issued a series of directive memoranda that outline how the agency expects forests to comply with subpart A.[5] First, each forest was required to submit its TAR by September 30, 2015. See 2013 Weldon Memo. Next, pursuant to its own regulations and directive memoranda, the Forest Service must consider the valid portions of its TAR and begin to determine the MRS in its analysis of site-specific projects of the appropriate geographic size under NEPA. See 2012 Weldon Memo at 2 (directing forests to "analyze the proposed action and alternatives in terms of whether, per 36 CFR 212.5(b)(1), the resulting [road] system is needed"). By analyzing whether a proposed project is consistent with the relevant portions of the TAR, and considering the MRS factors under 36 CFR	

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	212.5(b)(1), the Forest Service expects each forest to identify the MRS for particular forest segments. Id. ("The resulting decision [in a site-specific project] identifies the MRS and unneeded roads for each subwatershed or larger scale"). [5] 2010 Holtrop Memo; 2012 Weldon Memo; Memorandum from Leslie Weldon, U.S. Forest Service Washington Office, to Regional Foresters et al. (Dec. 17, 2013) (hereafter, 2013 Weldon Memo) (supplementing and reaffirming the 2012 Weldon Memo). Now that the Payette has completed its TAR, it is time for the Forest Service to take the next step under subpart A: identify the MRS through site-specific projects subject to NEPA.[6] As the forest moves from concept (i.e., the MRS recommendation in the TAR) to realization (through this site- specific project), it should ensure the resulting road system meets the requirements in the subpart A rule. In its DEIS, the Forest Service references the MRS but makes no attempt to explain how the roads identified to remain on the landscape under this project meet the MRS factors. DEIS at 62. [6] See 2012 Weldon Memo ("The next step in identification of the MRS is to use the travel analysis report to develop proposed actions to identify the MRS . . . at the scale of a 6th code subwatershed or larger. Proposed actions and alternatives are subject to environmental analysis under NEPA. Travel analysis should be used to inform the environmental analysis."). The Forest Service must consider the MRS factors listed at 36 C.F.R. § 212.5(b)(1) and make a determination as to which roads are needed. Specifically, for the roads it has decided to keep as part of the specific project: * The agency must determine whether each road, individually and in the cumulative, is needed to meet resource and other management objectives adopted in the relevant LMP. * The agency must determine whether each road, individually and in the cumulative, is needed to meet applicable statutory and regulatory requirements.	

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	* The agency must determine whether the MRS reflects long term funding expectations.[7] For roads that will remain on the landscape, the Forest Service must explain how maintenance of those roads will be supported based on long-term financial expectations. See DEIS at 62 (noting that "[r]oads that are recommended to remain on the landscape as part of the MRS would be maintained and improved"). * The agency must determine the identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance. [7] FSM 7712.1(1) ("Generally, use broad-scale travel analysis at the level of a ranger district or administrative unit to inform decisions regarding implementing the [MRS]," an example of which "is the ability to sustain the unit's road system at objective maintenance levels with expected levels of funding."). The National Forest road system is in a serious state of disrepair. The Payette National Forest is no exception. The best available science shows that roads cause significant adverse impacts to National Forest resources. Road-related impacts are a significant concern to the Payette. This results in a significant backlog of deferred maintenance needs. As the forest's TAR and more recent assessment recognize, the existing road system is not reflective of current or long-term funding expectations and is not sustainable. To the extent that the Payette's TAR failed to address the MRS factors and recommended an MRS, without actually identifying the MRS, the Forest Service must do so now in determining whether each road within the proposed project is needed. Consistent with 36 C.F.R. § 212.5(b)(1), the Forest Service must identify the MRS, based on the Forest Service's determination of what is needed to, inter alia, ensure minimization of adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance. The Forest Service must take this next step to consider the TAR, identify	

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	the MRS, identify unneeded roads for decommissioning, and implement those decisions as part of this project to achieve compliance with subpart A for this segment of the forest.	
9.13	*Proper Application of the 2013 TAP* The Forest Service should apply only the valid portions of its TAP, and reject the legally inadequate portions. The Washington Office memoranda outline that each TAR must: (1) analyze all roads (maintenance levels 1 through 5); (2) produce a TAP summarizing the travel analysis; (3) produce a list of roads likely not needed for future use; (4) synthesize the results in a map displaying roads likely needed and likely not needed; and (5) provide an explanation of the underlying analysis for that map. *See* 2012 Weldon Memo, 2013 Weldon Memo. In addition, the Washington Office instructed forests to consider the Watershed Condition Framework process so as to integrate the two approaches with new information or where conditions change. *Id.* Here, the Payette National Forest completed its TAP in 2013. Portions of the TAP are inadequate. Based on this analysis, the Forest Service should apply the valid portions of that TAP to this project, and reject or consider revising those portions of the TAP that are inadequate. For example, the risk and benefit analysis in the TAP skews heavily against identifying any high risk, low benefit roads. The Forest Service must rethink and rework its analysis when applying the TAP to this site-specific project. Any final list of needed and unneeded roads should reflect the results from the risks and benefits analysis in the TAR. It should be the rare circumstance in which a road identified with high risks and low access needs is identified as *likely needed*. We urge the Forest Service to identify high risk, low benefit roads within this project area for decommissioning. In rethinking the TAP analysis, the Forest Service should provide a timeline for determining how far into the future a road is needed. Simply because a road accesses a stand that is currently designated as suitable for logging does not automatically qualify it to be identified as needed. There must be a reasonable timeframe associated with the need.	The ID Team did assess road risk to hydrology and watershed function in its TAP process for the project area. Proximity to water, number of crossings, and existing road condition were included in discussion of the risk for each road. The effects to the economy and relative future funding were discussed in the Section 3.12 of the FEIS. The Minimum Road System was discussed for each resource section in Chapter 3 of the FEIS.

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	As a final example, the TAP did not include a comprehensive fiscal analysis of the road system. The budget forecast in the Forest Service's TAP must be realistic.[8] It should account for the cost of maintaining roads to standard-including standards under the Clean Water Act, costs required to comply with Best Management Practices related to road maintenance, costs associated with bridge maintenance and annualized replacement, and increasing effects of high precipitation events as a result of climate change. Moving towards an economically sustainable road system on the forest is not a new concept.[9] [8] FSM 7712.4(5) ("The [travel analysis] report should identify access needs and opportunities based on current budget levels and realistic projections of future funding."). [9] See, e.g., 63 Fed. Reg. at 4350 (noting in 1998 that "current funding mechanisms and levels are not adequate to maintain roads to the standards originally planned, to assure minimum ecological impacts, as well as to ensure efficient and safe use").	
9.14	*Consider Unneeded Roads for Closure or Decommissioning* Subpart A directs the agency to "identify the roads on lands under Forest Service jurisdiction that are no longer needed."[10] It refers to all roads, not just National Forest System roads. The rules define a road as "[a] motor vehicle travelway over 50 inches wide, unless designated and managed as a trail." 36 C.F.R. § 212.1. [10] 36 C.F.R. § 212.5(b)(2). See also Center for Sierra Nevada, 832 F. Supp. 2d at 1155 ("The court agrees that during the Subpart A analysis the Forest Service will need to evaluate all roads, including any roads previously designated as open under subpart B, for decommissioning."). The Forest Service must ensure that the actions proposed under this project are consistent with subpart A. The forest must assess the proposed actions as part of the project's implementation in relation to the TAP as well as the MRS factors, with the goal of minimizing adverse environmental impacts. Specifically, the decisions to close, decommission, or maintain certain roads should reflect the results from the risks and benefits analysis in the TAP. Routes identified for	The TAP is an initial recommendation for a road system that is expected to have more detailed review with more detailed information derived from field investigations, hence the possibility of changing recommendations on certain roads. The MFWR Project identified NFS roads and unauthorized routes in the Project area and prescribed a treatment/disposition for each based on the different alternatives. See FEIS Appendix 2 – Road Treatment Table. The basis for each alternative was the project level TAP with variations described by alternative for consideration by the decision maker for the Project.

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	decommissioning through the TAP or other processes within the project area must be closed, decommissioned, and reclaimed to a stable and more natural condition during the life of the project. To the extent that the final decision in this project differs from what is recommended in the TAP, the Forest Service must provide an explanation for that inconsistency. *See*, e.g., *Smiley v. Citibank*, 517 U.S. 735 (1996) ("Sudden and unexplained change . . . or change that does not take account of legitimate reliance on prior interpretation . . . may be 'arbitrary, capricious [or] an abuse of discretion") (internal citations omitted). The Forest Service proposes long-term closure of 17.8 miles of roads in the proposed action, Alternative 2. DEIS at 9. The Forest Service should consider these roads for decommissioning. The Forest Service should prioritize road decommissioning in this project to enhance landscape connectivity and ecological integrity based on: * Effectiveness in reducing fragmentation, connecting un-roaded and lightly-roaded areas, and improving stream segments, with a focus on inventoried roadless areas, important watersheds, and other sensitive ecological and conservation areas and corridors; * Benefit to species and habitats, including restoring aquatic and terrestrial habitats and habitat connections; * Addressing impaired or at-risk watersheds; * Achieving motorized route density standards; and * Enhancement of quiet recreation experiences. The Forest Service should use the National Best Management Practices for Water Quality Management on National Forest System Lands (Volume 1, April 2012) to guide road management in determining the MRS. The BMP program "was developed to improve agency performance and accountability in managing water quality consistent with the Federal Clean Water Act (CWA) and State water quality programs" and "[c]urrent Forest Service policy directs compliance with required CWA permits and State regulations and requires the use of BMPs to control nonpoint source pollution to meet applicable water	

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	quality standards and other CWA requirements." National Best Management Practices. It directs forests to: * Design the transportation system to meet long-term land management plan desired conditions, goals, and objectives for access rather than to access individual sites. * Limit roads to the minimum practicable number, width, and total length consistent with the purpose of specific operations, local topography, geology, and climate to achieve land management plan desired conditions, goals, and objectives for access and water quality management. *Id*. at 104. We urge the Payette National Forest to limit its road network to those roads that are necessary for access and management, and which can be adequately maintained within agency budgets and capabilities. We encourage road decommissioning and reductions in road density to improve watershed conditions and aquatic health in streams, as well as to protect and enhance wildlife habitat and connectivity. The Forest Service should continue working to reduce sediment delivery from roads, improve or remove road crossings, and close or decommission roads that cannot be adequately maintained. The DEIS states that roads not needed for future management or access and unauthorized routes will be decommissioned. We strongly support the proposal to decommission Forest Service roads. Looking at the details, however, the specifics of the agency's proposed action are not clear. For example, the timeline the Forest Service used to gauge whether a road might be needed for "future management or access" is unclear from the TAP and the analysis in the DEIS. The Forest Service should explain its timeline. Further, the Forest Service paints a false picture of the number of miles of system roads that will be decommissioned. The DEIS notes that the 80.7 miles of road for decommissioning *includes* unauthorized routes that will be used as temporary roads. DEIS at 9. For Alternative 2, that means 34.8 miles of unauthorized roads will remain on the landscape as temporary roads under this proposal, and at some later point in time the Forest Service plans to decommission those miles.	

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	This skews the analysis in several ways. First, as explained in the next section, temporary roads have very real impacts on the landscape and can remain for 10 years following a project, or longer without adequate assurances. Second, the Forest Service is inconsistent in its calculation and treatment of unauthorized roads. The TAP expressly did not include unauthorized roads-it analyzed only *system* roads. But at the point of applying the TAP to achieve real results, the Forest Service includes unauthorized roads in its calculations for road decommissioning. In reality, Alternative 2 proposes to decommission only 45.9 system roads. The DEIS must more clearly present this information. What is also unclear is when the road decommissioning will occur. The Forest Service states that the "34.8 miles of existing unauthorized routes would be used as temporary roads and obliterated after use." DEIS at 61. There is no timeline. As explained below, lack of any assurance as to when these currently unauthorized roads will be decommissioned is problematic.	
9.15	**III. The Forest Service must provide assurances that temporary roads will in fact be temporary in light of very real adverse impacts on the landscape.** We are particularly concerned about construction of temporary roads. Temporary roads must be closed within 10 years of completion of a project, per 16 U.S.C. 1608(a), unless the Forest Service re-evaluates the road and determines it to be necessary for the minimum road system. *Direct and Indirect Impacts* All of the action alternatives contemplate a combination of constructing new, and using existing unauthorized routes, for temporary roads. DEIS at 8. Under Alternative 2, the proposed action, the agency is proposing to construct up to 9.7 miles of new and use 34.8 miles of existing unauthorized routes as temporary roads. DEIS at 4. Some of these temporary roads will cross streams. *Id*. During the project, and for an additional of at least 10 years after completion of the project, the temporary roads will continue to have very real impacts on the forest. For example, temporary roads will	Temporary roads used and then decommissioned are accounted for in road density calculations because they already exist on the landscape. After use temporary roads and existing roads used as temporary roads will be obliterated and will no longer contribute to the road density calculation.

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	continue to allow for harassment of wildlife, segmenting of habitat, littering, fires, invasive plant distribution, and negative impacts to aquatic and riparian habitat, as well as the fish that depend on that habitat. Some impacts are unclear, given the lack of information in the DEIS. It notes that "incidental temporary roads" cannot yet be identified due to the level of site-specificity necessary. DEIS at 61. It states that incidental temporary roads would be preferentially located on existing unauthorized routes and obliterated when logging is completed. *Id*. The Forest Service must conduct site-specific analysis as part of this DEIS. This includes explicitly delineating where incidental temporary roads will be located. NEPA requires that this hard look assessment take place at the site-specific level if there are no additional NEPA processes yet to occur in the future to fully implement the project and the environmental impacts are reasonably foreseeable. *See New Mexico ex rel Richardson*, 565 F.3d 683, 718-19 (10th Cir. 2009) (requiring site-specific NEPA analysis when no future NEPA process would occur); *Colo. Envtl. Coal. v. Ofc. of Legacy Mgmt.*, 819 F. Supp. 2d 1193, 1208 (D. Colo. 2011) (requiring site-specific NEPA analysis even when future NEPA would occur because "environmental impacts were reasonably foreseeable"). *Cumulative Impacts* An agency's underlying substantive duty should inform the scope of the agency's NEPA analysis. *Westlands Water Dist. v. U.S. Dept. of the Interior*, 376 F.3d 853, 866 (9th Cir. 2004) (When an agency takes an action "pursuant to a specific statute, the statutory objectives of the project serve as a guide by which to determine the reasonableness of objectives outlined in an EIS."). The Forest Service has a substantive duty under subpart A to identify the MRS it determines is needed to, inter alia, ensure the "identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance." 36 C.F.R. § 212.5(b)(1). It also has a duty to identify roads no longer needed that should be decommissioned or considered for other uses. Id. § 212.5(b)(2). Under NEPA, it also has a duty to consider the effects of its	

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	proposed action when added to the existing road and trail system. *Wilderness Society v. U.S. Forest Service*, 850 F. Supp. 2d 1144, 1157-58 (D. Idaho 2012) (holding the Forest Service was arbitrary and capricious to conclude that designating 94 miles of user-created routes as non-system routes would have no significant impact). Here the Forest Service must consider the effects of its proposal to construct temporary roads when combined with the effects of its minimum road system. It must consider how construction of the proposed temporary roads will detract from the purpose of subpart A of the agency's own rules, to "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of the National Forest System lands." 36 C.F.R. § 212.5(b). It must also consider how construction of temporary roads will detract from the forest's efforts to achieve road density standards. Temporary roads are not included in road density calculations, but are certain to have real, lasting impacts on the resources that road density standards are designed to protect. These considerations are especially important if the Forest Service fails to provide assurances that the proposed temporary roads will in fact be closed within 10 years of completion of the relevant project.	
9.16	*Monitoring and Enforcement Assurances* Currently, the Forest Service does not track temporary roads and has no system to enforce closure of temporary roads once they have outlived the forecasted 10-year time span. The Forest Service must ensure that the temporary roads will in fact be temporary by including monitoring and enforcement during the vegetation projects, and then tracking the temporary roads for 10 years following completion of the projects to ensure the road will be removed from the landscape. It must also require some type of monetary assurance from the users of the temporary roads to guarantee that the user will close them 10 years after a project. Otherwise, the burden falls on the Forest Service. And based on the agency's recent TAP that it is unlikely the Forest Service will have the resources necessary to fund those closures. Construction of temporary roads without adequate monitoring and enforcement to ensure the roads will in fact be temporary undermines	All temporary roads used in this project will be decommissioned and fully recontoured. The decommissioning of all temporary roads will be part of the timber and stewardship contract. All items are approved by the sale administrator in order for the operator to get paid. This will ensure that temporary roads do in fact get decommissioned upon project completion.

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	the goals of subpart A to establish an economically and environmentally sustainable road network	
9.17	**IV. The existing plans lack clear standards for vegetation treatment.** The Forest Service needs to set out clear sideboards for directing treatments on high elevation white bark pine and aspen. The DEIS states the Forest Service designed all of the alternatives to maintain large tree size class stands by managing densities. DEIS at 15. It is unclear, however, exactly how the Forest Service will ensure large trees will be protected when managing densities. The Forest Service also plans to construct or reconstruct roads in RCAs. There is one area with series of RCA treatments within 5 feet of stream at road intersection. The Forest Service needs to provide clear standards here for how to conduct the work in a way that will minimize impacts to water quality to ensure the project occurs on the ground as envisioned in these plans. The Forest Service should include monitoring for activities within RCAs to ensure the work is conducted as planned. The agency plans to allow mechanical RCA treatments in upland vegetation. Again, here the Forest Service must include clear standards to ensure the project is carried out as envisioned, so as to minimize impacts on water quality. The agency is proposing treatments on legacy trees. It states that "[p]onderosa pine, western larch and Douglas-fir that fit the definition of legacy trees should be retained during harvest." DEIS at 119. It explains that this will be based on logic and experience. *Id*. It also proposes to retain forest stands that meet the definition of old forest, and this will also be based on logic and experience. *Id*. These existing descriptions are general-the public needs more specificity to understand precisely how the Forest Service intends to accomplish the stated goals of recruiting larger trees. The Forest Service must include quantitative standards, such as diameter limits, to guide these treatments. Guidelines alone will be insufficient to ensure the treatments are targeting small and medium trees to actually improve recruitment of the larger trees. The existing descriptions in the proposed work and DEIS lack the necessary assurances. The Forest Service must identify	Whitebark pine and aspen Chapter 2 (section 2.2) provides a description of the treatments which includes the intent of whitebark pine and aspen restoration treatments. Per Forest Service directives (FSM 2478.03), a silvicultural prescription detailing the methods, techniques and timing of treatments designed to meet the silvicultural objectives would be completed to ensure that all treatments are consistent with the NEPA and are meeting the objectives of the treatments, Section 2.3 and 2.4 of this FEIS also provide applicable management direction and project design features that would be followed if included in the decision for this project. Large tree size class, old forest, legacy tree and large tree concerns : It appears there may be some confusion between large tree size class stands and large trees. While PDF 55 does state that large tree size class stands will be retained as such, this does not imply that all large trees would be retained. To classify as a large tree size class stand there must be a minimum of 10% canopy cover of large trees (trees g>20”DBH). To achieve this, a stand typically need s from 7-10 trees per acre throughout the stand. In order to achieve this, silvicultural prescriptions (including marking guidelines when applicable) will be developed to design the treatments to maintain at least 10% canopy cover of trees greater than 20 inches DBH. Further information regarding this topic can be found in Appendix A of the Forest Plan. The effects of each alternative on large tree size class stands are addressed in Chapter 3 (Forested Vegetation Section). Additional information regarding old tree and large tree retention and old forest is addressed in Chapter 1, Chapter 2 and Chapter 3. Project design features 53, 54, 55, 58, & 59 address these topics (including all of the old forest characteristics identified in the Forest Plan [such as snags, CWD, and legacy

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	design features to address these concerns about implementation. Descriptions of enforcement should provide more information than simply the instrument or entity (i.e., timber sale contract, wildlife biologist, contract administrator). *See* DEIS at 119. For example, the analysis should detail how these standards will be written into a timber sale contract, how often monitoring will be conducted to ensure consistency with the timber sale contract, who will conduct the monitoring, and how the Forest Service would modify or change the plans if the on the ground activities do not reflect the plans for retaining legacy trees. Finally, the Forest Service should provide ecological justification supporting its chosen approach to retaining early seral legacy trees. The agency states that the objective of vegetation treatment is to retain early seral legacy trees for ecological function, diversity and wildlife habitat. But the agency fails to explain the basis for this. In contrast, the Forest Service included ecological justification for the RCA treatments. The Forest Service should similarly provide an ecological justification here, explaining how these treatments are serving ecological needs.	trees]). In addition, section 2.2 describes the preference for retention of trees for each of the different treatment types for each alternative. To insure that PDFs and NEPA intent are met silvicultural prescriptions, including marking guidelines for commercial treatments, would be prepared for all treatments in the project area. Activities in RCAs: Objectives for treatments in outer RCAs are based on Appendix A of the Forest Plan; this is described in the Chapter 2 of the FEIS (sections: "Riparian Conservation Area (RCA) Delineation" and "Vegetation Treatments"). Objectives for treatments within the inner RCA would be to target tree removal during the early stages of conifer encroachment, followed by prescribed burning for maintenance (WMT, CT-Aspen, and . These RCA treatments would be done by hand only. The target would be to cut/leave noncommercial size conifers and girdle/fell and leave/retain commercial size conifers. Cutting of noncommercial trees will reduce conifer encroachment while girdling and felling/leaving commercial sized conifers will increase CWD and Snag recruitment into these areas (Chapter 2 and Chapter 3). Silviculturalist in coordination with Hydrologist/Fish Biologist will develop prescriptions (and marking guides when applicable) in all stands with RCA considerations to design treatments that are consistent with the final decision for this project. Additionally, the FEIS includes plans to monitor these treatments, both through project design feature monitoring and through more intensive monitoring of a subset of the RCA areas treated. These monitoring plans are

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		included in Appendix 4 of the FEIS.As stated in the EIS Legacy trees are priority for retention. Retention Strategies for MFWR include: 1) Legacy tree guideline is used to determine status of large trees as legacy or not (see Appendix 7); 2) Densities of trees get higher per acre as diameter increases which means more large trees are retained per acre; 3) Retention of legacy is a priority; 4) Large Tree Size class (LTSC) stands are predetermined, noted and maintained as LTSC e; and lastly 5) Silviculturalist has approved the marking in all units meaning that we have met the intention of the marking
9.18	**V. The Forest Service must consider impacts on lynx and lynx habitat.** The Forest Service must describe in complete detail - using numeric quantification and detailed maps - what lynx habitat exists in the Project area. This should not just identify mapped lynx habitat, or occupied lynx habitat, but should also include the different types of lynx habitat, including denning, foraging, and winter habitat, as well as linkage areas and connectivity corridors. This information is crucial to determining what specific impact the project will have on lynx, and what areas the Forest Service should avoid. Further, this information is imperative for the Forest Service to reasonably determine whether or not the project will be consistent with the 2013 Canada Lynx Conservation Assessment and Strategy. Lynx avoid areas that have been clearcut, logged, and even thinned. Thinning will open up the habitat and reduce cover. The Interagency Lynx Conservation Assessment and Strategy (August 2013) (LCAS) includes vegetation management as one of the top four anthropogenic threats to lynx. *See* LCAS at 69. The LCAS also recognizes that	See Section 3.4.5.5. Affected Environment and Section 3.4.6.4 Environmental Effects for Canada lynx in the FEIS. The Project is consistent with the 2013 LCAS conservation measures for vegetation management in secondary areas. • Provide a mosaic of forest structure that includes dense early-successional coniferous and mixed-coniferous-deciduous stands, along with a component of mature multi-story conifer stands. Flexibility in the amounts and arrangement of various successional stages is acceptable, provided that a mosaic can be sustained. Vegetation treatments should be designed with consideration of historical landscape patterns and disturbance processes. • Design timber harvest, planting, and thinning to include some representation of young densely-stocked regenerating stands in the mosaic for snowshoe hare production areas (Interagency Lynx Biology Team 2013).

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	managing forests to the extent that the canopy is opened discourages use of those stands by lynx. LCAS at 73. Further, reduction in horizontal cover, one of the results of the project, degrades the quality of winter habitat for lynx. *Id*. The LCAS also notes that lynx avoid clearcut areas, especially during winter. *Id*. Squires also emphasizes the importance of maintaining and recruiting lynx winter habitat as opposed to winter hare habitat, as that is what is most important to conserve lynx, especially in winter when lynx are most taxed. *See* Squires et al., 2010. The Forest Service needs to be cautious with treatments in lynx habitat. It must do more than analyze the effects on snowshoe hare. The DEIS must fully disclose and analyze effects to lynx winter habitat, both in terms of retention and recruitment. The Forest Service should prioritize retention and recruitment of abundant and spatially well distributed patches of mature, multi-storied forest stands. The Project should be designed to conserve lynx winter habitat and manage stands in a manner that would allow younger stands to eventually become good lynx winter habitat. Young stands in the stand initiation stage may be decent habitat for snowshoe hares (once tree seedlings and saplings grow above the snow) but they are not good lynx winter habitat. Because lynx denning habitat must occur near lynx foraging habitat (see LCAS at 29), the Forest Service must discuss and analyze the current state of lynx denning habitat within the project area, especially as it relates spatially to lynx foraging habitat. Without this baseline, there can be no legitimate determination of the effects of the project on lynx denning habitat. The environmental analysis should disclose (preferably on a map) and analyze what portions of the project area currently is considered to be lynx denning habitat, what portions of the project area are considered to be foraging habitat for lynx, what portions of that lynx denning habitat would be subject to treatments, what portions of lynx denning habitat would be degraded as a result of treatments, and how long it would take for degraded or destroyed denning habitat to once again become lynx denning habitat. Importantly, the DEIS must disclose what percentage of each LAU is made up of lynx denning habitat, how much coarse woody debris	Lynx denning, foraging, and traveling habitats are included in our lynx model, by incorporating the correct forest strata that contain the physical attributes of these lynx habitat components. These strata include the structural components of tree size; canopy cover; dead and dying trees; understory debris with jack-strawed and leaning snags, and logs on the ground; open, non-forested sites in a mosaic with forested sites; forested islands located within open areas, etc. Our alteration of forested stands at higher elevation is designed to improve lynx habitat quality in the long-term rather than leaving stagnated stands that degrade the quality of lynx habitat. We anticipate the current and future tree mortality from the local insect infestation will further improve habitat quality for lynx in the MFWR project area. The lynx model includes parameters that account for lynx habitat use, including denning, foraging, and traveling, as presented in both the 2000 and 2013 LCAS.

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	currently exists within the denning habitat in each LAU, or what anticipated changes to coarse woody debris in each LAU's denning habitat would result from the Project's implementation. These issues should be addressed both qualitatively and quantitatively. If the Forest Service does not have this information, it should not proceed with a major vegetation management project without knowing what kinds of effects it will have on important lynx denning habitat in the project area. The DEIS should discuss and analyze how lynx movement through the project area would be affected by the project, and what impacts to lynx travelling to other areas would see. Particular attention should be given to both official lynx linkage areas as well as other known travel corridors in the project area. The DEIS should fully discuss the effects of the construction of temporary roads, the recommissioning of previously closed roads, and the construction of new roads on lynx and fragmentation of lynx habitat, as well as snow compaction and the potential for recreational use of those roads. The DEIS must also explain whether these roads would be closed to the public, how long they will be left on the landscape, how they will be decommissioned, what specific funding will be used to decommission and obliterate roads, what risk of unauthorized use of those roads by the public would be, and what funding exists to prevent unauthorized use of those roads. The Forest Service should not entertain a Forest Plan amendment to allow creating more than 30% suitable Canada lynx habitat within the Middle Fork Weiser River Lynx Analysis Unit. To the extent that Alternative 4 proposes this modification, we strongly oppose it.	
9.19	**VI. The Forest Service must consider and address elk security.** The Forest Service needs to better address elk security concerns. The goal is to provide 30% of the landscape for elk security areas. DEIS at 256. This is measured based on road densities. As noted above, it is unclear whether the unauthorized roads that the Forest Service proposes to be used for temporary roads are included in the road density measurements. This is unlikely. Therefore the measurements largely underestimate existing and projected road densities. On top of	The elk security model analyzed three levels of road use for the Project. 1. All year-round open routes. This included NFS roads and unauthorized routes that were drivable. 2. Year-round and seasonally open routes. This included the same as above with the addition of seasonally open roads. 3. All roads and motorized trails. All action alternatives decrease overall road density in the Project area.

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	that, Fish and Wildlife Service studies show that it is not possible to address elk security and maintain the current road densities. The Forest Service needs to seek out more opportunities to provide secure habitat for elk. Fish and Game told the Forest Service to keep looking for opportunities. We strongly suggest considering roads proposed for closure to be decommissioned, to permanently reduce road densities on a shorter time scale than the temporary road decommissioning proposed here.	See Elk Security Area Analysis in section 3.4.5.6 and Table 3.4-59 for security area polygon size by alternative. Improving the number and size of elk Security Areas is directly related to the physical condition of the available habitat in the analysis area. The 2007 Grays Creek Fire altered large areas of elk habitat in the MFWR drainage; some areas burned at high intensity, leading to “stand replacement” conditions. Other areas burned at lower intensities, creating more of a mosaic of tree and shrub structure. Since that fire, these lower intensity sites have produced excellent calving areas and varying degrees of quality hiding cover.
9.20	**VII. The Forest Service must consult with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act.** Bull trout exist in the East Fork Weiser River and Dewey Creek, and both are designated bull trout critical habitat. DEIS at 384. The Forest Service determination for all alternatives is *May Affect, Not Likely to Adverse(ly) Affect* bull trout and their critical habitat. DEIS at 420. The Forest Service reasoned that although it is adding a trail to the trail system, it is an existing trail and therefore there is no addition. *Id*. Also, all crossings already exist, crossing approaches would be hardened, and work would occur in the summer when stream flows are low. Id. This determination ignores the impacts of dry weather work on critical habitat, and how that might impact bull trout when water flows return to higher levels. The U.S. Fish and Wildlife Service (USFWS)'s latest Recovery Plan for bull trout identifies historical habitat loss and fragmentation, interaction with nonnative species, and fish passage issues as the most significant primary threat factors affecting bull trout. USDI Fish and Wildlife Service, Recovery Plan for the Coterminous United States Population of Bull Trout (*Salvelinus confluentus*) (2015), page iv. It notes that the Weiser River is one of the two least robust, most threatened core areas. *Id*. at 8. Section 7 of the Endangered Species Act (ESA) imposes a substantive obligation on federal agencies to "insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of" habitat that has been	A project-specific Biological Assessment will be completed and submitted to the Fish and Wildlife Service for section 7 consultation for activities associated with the Project in the East Fork Weiser River subwatershed. A letter of concurrence is expected from the US Fish and Wildlife Service. The BA includes a crosswalk with bull trout critical habitat primary constituent elements and Forest Plan Watershed Condition Indicators. The may affect, not likely to adversely affect determination was based on fish surveys that show bull trout are not found in the vicinity of the trail crossings but are found greater than 600 feet downstream below a potential natural barrier. Implementation of hardening the crossings and designation of the trail is not expected to directly affect bull trout. In addition, the trail crossing would not affect shade, temperature, or large woody debris. Sediment delivery to the stream would be minimized to the extent possible and hardening of the crossing would minimize sediment delivery to the East Fork Weiser River.

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	designated as critical for the species. 16 U.S.C. § 1536(a)(2); *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 924 (9th Cir. 2008). The Forest Service must consult with the USFWS under section 7 of the Endangered Species Act as to the impacts of the project on species listed under the ESA and designated critical habitat, including bull trout. We encourage the Forest Service to be transparent about the consultation process and affirmatively post all consultation documents, including any Biological Assessment submitted to the USFWS, any letters seeking concurrence, and any responses or Biological Opinions from the USFWS. Doing so will allow the public to view these critical documents, and other documents in the project record, without the need to submit a formal FOIA request.	
9.21	The Forest Service's current road system is over-sized and unaffordable. Identifying a sustainable road network is one of the most important endeavors the Forest Service can undertake to restore aquatic systems and wildlife habitat, facilitate adaptation to climate change, enhance recreation, and lower operating expenses. Considering the MRS and making investments to implement the MRS as soon as possible will end up saving taxpayer dollars by avoiding expensive repairs and other restoration tasks that would otherwise be inevitable in the future. Increasing the pace of restoration activities to implement a right-sized road system is incredibly important and long overdue.	Thank you for your comment.
10. O'Brien, Allison – U. S. Department of the Interior		
10.1	Dear Mr. Penny: The Department of the Interior has reviewed the Draft Environmental Impact Statement for the U.S. Forest Service's Middle Fork Weiser River Landscape Restoration Project at Payette National Forest, Idaho. The Department has no comments on the document at this time. We appreciate the opportunity to comment.	Thank You for your comment.

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11. Paradis, Mike – Adams County Commission		
11.1	The Board of Commissioners support Alternative 4 regarding vegetative management for the following reasons: More White Bark Pine restoration is needed, part curly in the West Mountain region. White Bark Pine restoration is not adequately analyzed in the document. Alternative 4 should be adopted to allow for the latest science to be used regarding the unoccupied lynx habitat. This is the best opportunity to utilize the project based Forest Plan Amendment.	Thank You for your comment.
11.2	Alternative 4 should be adopted to adhere to the upcoming revision of the Adams County Fire Mitigation Plan that adds the Tamarack Resort WUI, running from No Business Saddle along Road 218 (Jungle Creek Primary) south to the Mica Ridge country, taking all those lands to the East to the Adams/Valley County line.	The Forest is working with the County on the County Mitigation Plan, both Alt 2 and 4 include fuel breaks that address these concerns. Alternative 5 has incorporated additional shaded fuel breaks within the County's WUI boundary.
11.3	Alternative 4 should be adopted regarding the vegetative management in PVG's 7-11. These lands are the most out of the Historical Range of Variability and can be corrected most quickly by mechanical means. This would also best comply with 2 of the 5 goals of the PFC: to increase forest resiliency which also reduces fuel loads, and to enhance the economic violability of the surrounding communities.	Thank you for your comment.
12. Public, Jean - Individual		
12.1	I want natural nature trees living there not fake lumberyard species that the fs wants to make money on logging and selling to china. fs is evil in its manipulation and attacks on nature. the alleged "desired conditions" are not natural. tey are manmade and certainly not natural at all. I reject them and consider them as moneymaking greed plans.	The purpose and need of the project is disclosed in Chapter 1. Vegetation treatments have been proposed to move the project area toward the desired conditions disclosed in the FEIS.
12.2	I note your plan to burn 24,000 acres. what a load of air pollution that is. you will cause endless human suffering with the results of burning being lung cancer, asthma, allergies, pneumonia, strokes and heart attacks. your pollute the air with fine particulate matter and cause	All prescribed burning is subject to approval from the Montana/Idaho State Airshed Group. All burning will be in compliance with national and state air quality regulations. See FEIS, Section 1.12.2 Air Quality.

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	deaths and hospitalizations. you are stupid in this planned air pollution and menacing to American people, since it goes east across this country.	
12.3	I reject thinning. nature knows hot it needs to grow. the fact is much recent research shows trees talk to each other and reach out to each other. we don't want this manmade artificial evil thinning. you are menacing and attacking th enatural growth of trees. you need to educate yourself on recent research.	Best available science was used in the analysis process for MFWR.
12.4	I reject l0 acres size openings, you are evedidently tgrying to encourage the growth of deer which love such openings. you are deliberabely attacking nature to grow deer populations. stop this assault on the nature of growth. all u.s. values are harmed by this stupid plan.	The purpose and need of the project is disclosed in Chapter 1. Vegetation treatments have been proposed to move the project area toward the desired conditions disclosed in the FEIS. The analysis of the effects on each resource is described in Chapter 3.
12.5	I reject improvement of cabin creek campground facilities. no need for this out of control spending. no need for any of this out of control spending. this is a rip off of general taxpayers. there is too much wasteful spending and attack o nature in this plan. this appears to be amake work project so that local employees can make overtime and higher salaries and monies, as well as givebacks to locals at the expense of the national owners of this land.	Thank You for your comment.
13.	***Scheff, Aaron – Idaho Department of Environmental Quality***	
13.1	**1. Air Quality** * Please review IDAPA 58.01.01 for all rules on Air Quality, especially those regarding fugitive dust (58.01.01.651), trade waste burning (58.01.01.600-617), and odor control plans (58.01.01.776). * IDAPA 58.01.01.201 requires an owner or operator of a facility to obtain an air quality permit to construct prior to the commencement of construction or modification of any facility that will be a source of air pollution in quantities above established levels. DEQ asks that cities and counties require a proposed facility to contact DEQ for an applicability determination on their proposal to ensure they remain in compliance with the rules. For questions, contact the DEQ Air Quality	All required permits will be secured before implementing prescribed fire activities.

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	Permitting Hotline at 1-877-573-7648. *** IDAPA 58.01.01.614 sets out the rules for prescribed burning in Idaho. Please ensure all prescribed burning is done in compliance with the rules, and in compliance with the 2010 Operations Guide of the Montana / Idaho Airshed Group**	
13.2	**2. Wastewater and Recycled Water** * DEQ recommends verifying that there is adequate sewer to serve this project prior to approval. Please contact the sewer provider for a capacity statement, declining balance report, and willingness to serve this project. * IDAPA 58.01.16 and IDAPA 58.01.17 are the sections of Idaho rules regarding wastewater and recycled water. Please review these rules to determine whether this or future projects will require DEQ approval. IDAPA 58.01.03 is the section of Idaho rules regarding subsurface disposal of wastewater. Please review this rule to determine whether this or future projects will require permitting by the district health department. All projects for construction or modification of wastewater systems require preconstruction approval. Recycled water projects and subsurface disposal projects require separate permits as well. * DEQ recommends that projects be served by existing approved wastewater collection systems or a centralized community wastewater system whenever possible. Please contact DEQ to discuss potential for development of a community treatment system along with best management practices for communities to protect ground water. * DEQ recommends that cities and counties develop and use a comprehensive land use management plan, which includes the impacts of present and future wastewater management in this area. Please schedule a meeting with DEQ for further discussion and recommendations for plan development and implementation. For questions, contact Todd Crutcher, Engineering Manager, at 373-0550. **3. Drinking Water** * DEQ recommends verifying that there is adequate water to serve this project prior to approval. Please contact the water provider for a capacity statement, declining balance report, and willingness to serve this project.	The Project will follow all DEQ/State of Idaho BMPs.

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	* IDAPA 58.01.08 is the section of Idaho rules regarding public drinking water systems. Please review these rules to determine whether this or future projects will require DEQ approval. All projects for construction or modification of public drinking water systems require preconstruction approval. * DEQ recommends verifying if the current and/or proposed drinking water system is a regulated public drinking water system (refer to the DEQ website at http://www.deq.idaho.gov/water-quality/drinking-water.aspx). For non-regulated systems, DEQ recommends annual testing for total coliform bacteria, nitrate, and nitrite. * If any private wells will be included in this project, we recommend that they be tested for total coliform bacteria, nitrate, and nitrite prior to use and retested annually thereafter. * DEQ recommends using an existing drinking water system whenever possible or construction of a new community drinking water system. Please contact DEQ to discuss this project and to explore options to both best serve the future residents of this development and provide for protection of ground water resources. * DEQ recommends cities and counties develop and use a comprehensive land use management plan which addresses the present and future needs of this area for adequate, safe, and sustainable drinking water. Please schedule a meeting with DEQ for further discussion and recommendations for plan development and implementation. For questions, contact Todd Crutcher, Engineering Manager at 373-0550. **4. Surface Water** * A DEQ short-term activity exemption (STAE) from this office is required if the project will involve de-watering of ground water during excavation and discharge back into surface water, including a description of the water treatment from this process to prevent excessive sediment and turbidity from entering surface water. * Please contact DEQ to determine whether this project will require a National Pollution Discharge Elimination System (NPDES) Permit. If this project disturbs more than one acre, a stormwater permit from EPA may be required.	

#	Comment / Concerns	Forest Service Response
	* If this project is near a source of surface water, DEQ requests that projects incorporate construction best management practices (BMPs) to assist in the protection of Idaho's water resources. Additionally, please contact DEQ to identify BMP alternatives and to determine whether this project is in an area with Total Maximum Daily Load stormwater permit conditions. * The Idaho Stream Channel Protection Act requires a permit for most stream channel alterations. Please contact the Idaho Department of Water Resources (IDWR), Western Regional Office, at 2735 Airport Way, Boise, or call 208-334-2190 for more information. Information is also available on the IDWR website at: http://www.idwr.idaho.gov/WaterManagement/StreamsDams/Streams/AlterationPermit/AlterationPermit.htm * The Federal Clean Water Act requires a permit for filling or dredging in waters of the United States. Please contact the US Army Corps of Engineers, Boise Field Office, at 10095 Emerald Street, Boise, or call 208-345-2155 for more information regarding permits. For questions, contact Lance Holloway, Surface Water Manager, at 373-0550. **5. Hazardous Waste And Ground Water Contamination** * **Hazardous Waste.** The types and number of requirements that must be complied with under the federal Resource Conservations and Recovery Act (RCRA) and the Idaho Rules and Standards for Hazardous Waste (IDAPA 58.01.05) are based on the quantity and type of waste generated. Every business in Idaho is required to track the volume of waste generated, determine whether each type of waste is hazardous, and ensure that all wastes are properly disposed of according to federal, state, and local requirements. * No trash or other solid waste shall be buried, burned, or otherwise disposed of at the project site. These disposal methods are regulated by various state regulations including Idaho's Solid Waste Management Regulations and Standards, Rules and Regulations for Hazardous Waste, and Rules and Regulations for the Prevention of Air Pollution.	

#	Comment / Concerns	Forest Service Response
	* **Water Quality Standards.** Site activities must comply with the Idaho Water Quality Standards (IDAPA 58.01.02) regarding hazardous and deleterious-materials storage, disposal, or accumulation adjacent to or in the immediate vicinity of state waters (IDAPA 58.01.02.800); and the cleanup and reporting of oil-filled electrical equipment (IDAPA 58.01.02.849); hazardous materials (IDAPA 58.01.02.850); and used-oil and petroleum releases (IDAPA 58.01.02.851 and 852). Petroleum releases must be reported to DEQ in accordance with IDAPA 58.01.02.851.01 and 04. Hazardous material releases to state waters, or to land such that there is likelihood that it will enter state waters, must be reported to DEQ in accordance with IDAPA 58.01.02.850. * **Ground Water Contamination.** DEQ requests that this project comply with Idaho's Ground Water Quality Rules (IDAPA 58.01.11), which states that "No person shall cause or allow the release, spilling, leaking, emission, discharge, escape, leaching, or disposal of a contaminant into the environment in a manner that causes a ground water quality standard to be exceeded, injures a beneficial use of ground water, or is not in accordance with a permit, consent order or applicable best management practice, best available method or best practical method." For questions, contact Dean Ehlert, Waste & Remediation Manager, at 373-0550. 6. Additional Notes * If an underground storage tank (UST) or an aboveground storage tank (AST) is identified at the site, the site should be evaluated to determine whether the UST is regulated by DEQ. EPA regulates ASTs. UST and AST sites should be assessed to determine whether there is potential soil and ground water contamination. Please call DEQ at 373-0550, or visit the DEQ website (http://www.deq.idaho.gov/waste-mgmt-remediation/storage-tanks.aspx) for assistance. * If applicable to this project, DEQ recommends that BMPs be implemented for any of the following conditions: wash water from cleaning vehicles, fertilizers and pesticides, animal facilities, composted waste, and ponds. Please contact DEQ for more information on any of these conditions.	

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	We look forward to working with you in a proactive manner to address potential environmental impacts that may be within our regulatory authority. If you have any questions, please contact me, or any our technical staff at 208-373-0550.	
14. Sutton, Steve – Sutton Livestock Co. Inc.		
14.1	I am a permittee on Indian Mountain Allotment and a member of the Indian Mountain Cattle Association. I attended the information meeting at the Council Ranger District on March 8, 2016 and have reviewed the DEIS for the Middle Fork Weiser River Restoration Project. After reviewing the document I noted several items that may need further clarification. Monitoring, road decommission and elk management are particularly concerning.	Thank You for your comment.
14.2	The document mentions some coordination with permittees on some actions that may effect their grazing permits. It should be addressed throughout the document that the livestock permittees should be involved and coordinated with on any actions that may affect the grazing permit. This include the monitoring protocols, location of monitoring points and actions that involve road decommission, riparian restoration, wildlife management, stream temperature and upland vegetation restoration.	The IDT has made a concerted effort to identify any activity proposed in the action alternatives that may impact grazing allotment permittees throughout the development of this project and will continue to work with permittees during the remaining period of analysis and as the project is implemented. Expected effects to Rangeland Management from the proposed action are summarized in FEIS 3.13. If any activity during implementation is thought to impact grazing allotment permittees it will be brought to the attention of the permittees for coordination with the Forest Service prior to that activities implementation. We look forward to the continued communication and coordination with you and other permittees.
14.3	All roads that decommissioned that had been used in the management of livestock movement and facility maintenance should be coordinated with the permittees. There should be provisions that will allow the permittees to continue to have administrative access to continue to do proper management of facilities and livestock	Road decommissioning is coordinated with livestock permittees and is included in Chapter 2 of the FEIS.
14.4	The elk management address the density of road and the decommission of road that would allow the elk population to increase and be a viable population. This document states that the IDFG will management the elk population and the FS would work closely with	Increasing elk security areas by decommissioning roads is one measure used for the wildlife analysis in this document. It should not be assumed that increasing elk security equates to increased elk population. If elk population goals set by the Idaho Department of Fish and Game are being exceeded and

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	them. There is no mention of a target number on what the elk population will be. The concern is that the elk are a direct competitor to livestock for forage and water and that the management of the elk population is through hunting. With the decommission of road to protect the elk population and limit hunting access, the elk population appears to have no limitations on size of population and will have limited methods to control the population. This documents needs to address that when the elk population is affecting the existing livestock permits, that IDFG will be required to reduce elk population and some of the restricted access to hunting would have temporary exemption to allow better access to over populated elk numbers.	become a problem, they can adjust seasons and permit numbers to provide more hunting opportunity and achieve population goals. Roads that are decommissioned or closed to motorized travel as part of this project do not preclude any member of the public from hunting in this area. Opening roads for increased hunter access to decrease elk numbers is not part of the purpose and need of this project and will not be considered in the analysis. The Forest Service cannot require IDFG to decrease the elk population within the project area.
15. Thompson, Dick - Individual		
15.1	Stand-replacing wildfires are my main concern.	Thank you for your comment.
15.2	I believe that Alternative 4 best meets the purpose and need as stated. I urge implementation.	Thank You for your comment.
15.3	I also understand the need for and recommend the adoption of a site-specific non-significant amendment of the Forest Plan to Forest-wide standard TEST15 to allow for more than 30% of lynx habitat to be made unsuitable in the short term. The PFC strategy of management up to, but not over 30% of lynx habitat to be made unsuitable may not keep the Forest out of court so why not implement an alternative that best meets the need and defend the analysis. Lynx habitat would certainly be unsuitable if it burned up.	Thank You for your comment.
16. Warness, Lidsay – Boise Cascade, LLC		
16.1	As a member of the Payette Forest Coalition, Boise Cascade supports the proposals from the Payette Forest Coalition, alternative 2 with the modifications proposed by the Payette Forest Coalition.	Thank You for your comment.
16.2	Boise Cascade supports vegetation treatments in PVGs 6-11 because of the ecological benefit of developing a heterogeneous pattern across	Thank you for your comment.

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	the landscape to break up the contiguous fuels and provide a better balance of wildlife habitat for the desired species.	
16.3	I support the work being done in the lynx habitat, according to a recent article in National Geographic (http ://voices. nationalgeographic.com/2016/0 3/07/shadow-cat-canada-lynx silently-cross-u-s-state-national-borders/), the lynx do not depend on the old growth forests but more on the early successional forests where the Snowshoe hares hide	Thank You for your comment.
16.4	Please continue to focus on economics as a key issue for the project. The wood products industry is extremely important to the restoration of our national forest system. A suite of projects similar to this project are needed to provide sustainability and longevity of the industry and the local communities near this project	Thank you for your comment.
16.5	I am concerned that the project treatments will not truly alleviate the adjacent private landowners concerns about Elk impacts. I suggest that the Forest Service look at incorporating these concerns into the prescriptions for vegetation treatment. It is important that these animals have sufficient forage on the national forest to entice them to the stay on the national forest instead of causing damage to the private lands adjacent to the area.	Thank You for your comment.
16.6	I support work to restore Whitebark Pine in the project area. It is important that the forest work towards restoration of this key focal species.	Thank You for your comment.
16.7	I suggest that the Forest Service also look very closely at the forest/private land border in order to ensure that the national forest is a good neighbor. Reducing risk in the WUI is important to ensure that the landowner's values are taken into account with regards to wildfire. I suggest that the Forest Service ensure that the areas treated within the WUI are treated towards to lower end of the of the management zone to reduce the risk of wildfire traveling from the national forest to the private lands. A running ground fire is much easier to manage than a running crown fire.	Thank You for your comment.

#	Comment / Concerns	Forest Service Response
16.8	We support the implementation of restoration activities in moist, mixed conifer (MMC) forests because a recent science synthesis produced by the Pacific Northwest Research Station indicates that the fire regimes are more frequent than once thought and that the forests "...today contain a significantly greater component of shade-tolerant species (e.g. white or grand fir or understory Douglas-fir) than occurred historically." (Stine et al, pg. 17). In the same synthesis it states that "...MMC forests experienced frequent to moderately frequent fires (<20-50 years) and fire severity was typically mixed, but patches of low and high-severity fire also occurred." (Stine et al, pg. 17). These MMC forests are in need of restoration and should be managed at a landscape scale to better emulate historic disturbances	Thank You for your comment and the references presented. The action alternatives all propose treatments in moist mixed-conifer forest.
16.9	I appreciate the guidelines that the Forest Service has incorporated that do not include a limitation on removal of trees over 21". It is appropriate to remove some of the larger trees in order to restore the structure on the landscape as well as allow for early seral trees to repopulate these areas.	Thank you for your comment.
16.10	Canopy cover is also a concern. High canopy cover is associated with sustained crown fire potential. All of the alternatives leave excess acreage in the high canopy cover class. Please review any additional options to reduce the canopy cover to lessen the fire danger in the area and meet the purpose and need of the project.	Although this project does not move all attributes into the desired condition as specified in the Forest Plan, the FEIS (and the Forest Plan) acknowledge that the “Desired conditions do not represent a static state; they are dynamic because the ecosystem is dynamic. Achievement of desired conditions well distributed across the planning unit, is a long term goal of Forest Management.” All of the action alternatives have been designed to move toward the desired vegetative conditions while balancing other resource objectives, standards and guidelines.
16.11	High Canopy closure also impacts elk nutrition availability, especially in the moist, mixed conifer areas.	Thank You for your comment.
16.12	Depending on the contract vehicle used, please consider using "designation by prescription" or "designation by description" in order to cut down on layout and implementation costs.	Thank you for your comment.

Appendix 10
Response to Comments - Literature and Opposing Views

Introduction

This table documents the Middle Fork Weiser River Landscape Restoration Project interdisciplinary team's (IDT) responses to literature, science, and opposing view submitted by commenters. IDT review or response to citations included in this table was specifically requested by commenters in their letters. Full response to comments is located in FEIS Appendix 8. Full copies of letters received are located in the project file and on the project webpage (http://data.ecosystem-management.org/nepaweb/nepa_project_exp.php?project=41687).

In some cases, commenters used literature to support comments within the body of their individual letters. Those citations were only reviewed in this table if the commenter specifically requested, otherwise those comments were responded to in FEIS Appendix 9, Response to Comments.

Commenters

Payette Forest Coalition 2
Boise Cascade, Lindsey Warness, AFRC, Irene Jerome, and EPA, Christine Littleton 2
Dick Artley 2

#	Citation	Forest Service Response
Payette Forest Coalition, Dennis Murphy		
1.1	Hessburg, PF et al, Restoring fire-prone Inland Pacific landscapes: seven core principles, Landscape Ecology, Volume 30, Issue 10, pp 1805-1835.	Paper noted, is pertinent and relevant. Concepts reviewed and incorporated into FEIS.
Boise Cascade, Lindsey Warness, AFRC, Irene Jerome, and EPA, Christine Littleton		
2.1	Stine, P; P. Hessburg; T. Spies; M. Kramer; C. Fettig; A. Hanson; J. Lehmkuhl; K. O'Hara; K. Polivka; P. Singleton; S. Charnley; A. Merschel. The Ecology and Management of Moist Mixed-conifer Forests in Eastern Oregon and 4 Washington: a Synthesis of the Relevant Biophysical Science and Implications for Future 5 Land Management. In press, 2013.	Paper noted, is pertinent and relevant. Provides summaries of relevant research. Concepts already incorporated into FEIS.
Dick Artley		
3.1	**Attachment 3 - Fuels Reduction Opposing View #1 -** "large, severe wildfires are more weather-dependent than fuel-dependent," Agee, James K. Ph.D. "**The Severe Weather Wildfire-Too Hot to Handle?** *Northwest Science*, Vol. 71, No. 1, 1997 http://www2.for.nau.edu/courses/pzf/FireEcolMgt/Agee_97.pdf	The above quotation was taken out of context. The author says that the statement provided in quotations should not be generalized to all forest types. Fire behavior is a function of fuel, weather, and topography. The author suggests that weather is likely the most influential factor in fire behavior for subalpine forests and moist coastal forests of Douglas-fir and western hemlock which are historically characterized by a high-severity fire regime. However, the author suggests that for the mixed conifer forests with a variety of dry-site conifers present, such as what is identified for treatment in the Middle Fork Weiser River project, fuel is likely the most influential factor in fire behavior.
3.2	**Attachment 3 - Fuels reduction Opposing View #2 -** "The biggest ecological con job in years is being waged by the U.S. Republican party and their timber industry cronies. They are blaming the recent Western wildfires on environmentalists, and assuring the public that commercial logging will reduce the risk of catastrophic wildfires."	Conjecture/opinion and outside the scope of the proposed actions for Middle Fork Weiser River project.

#	Citation	Forest Service Response
	Barry, Glen, Ph.D. "**Commercial Logging Caused Wildfires**" Published by the *Portland Independent Media Center*, August 2002. http://portland.indymedia.org/en/2002/08/17464.shtml	
3.3	**Attachment 3 - Fuels reduction Opposing View #3 -** "One reason that fuels reduction treatments should be limited is that they may not address the important effects of climate and weather on fire behavior. Some studies suggest that it is drought and warmer temperatures—not fuels accumulations—that are the major explanatory factors for large fires (O'Toole 2002-2003, Pierce et al. 2004). It is an unrealistic goal to return all forests to historical states, in light of the fact that agencies have no control over drought or temperature." (pgs. 15 – 16) Berry, Alison Ph.D., 2007. "**Forest Policy Up in Smoke: Fire Suppression in the United States**." A PERC publication. http://www.law.northwestern.edu/searlecenter/papers/Berry_forest_policy.pdf	The cited article is opinion commentary about fire suppression policies on the federal lands and recommends changes in funding for suppression efforts to curb spending. The author also recommends that efforts should be focused on fuels reduction and restoring fire-adapted ecosystems, as appropriate for local conditions. Middle Fork Weiser River vegetation treatments are within warm, dry forest types characteristic of low to mixed severity fire regimes. However, field surveys indicate that tree densities and species composition are outside their historical range. A combination of prescribed burning and mechanical treatments is prescribed to restore stand structures and compositions more likely to support low and mixed severity wildfire so the landscape as a whole can experience the full spectrum of wildfire intensities as it did in the past. These desired stand structures also make the stands more resilient to insects, disease and drought. It is well established that potential fire behavior (intensity) and severity (effect) are dependent on the interaction between fuel, weather, and physical setting (Graham et al. 2004). Any particular wildfire's growth and behavior are unique because of the infinite combinations of these factors that can occur over spatial and temporal scales (Graham et al. 2004). Of these three factors, the only thing humans can alter through management is fuel.
3.4	**Attachment 3 - Fuels reduction Opposing View #4 -** "Fire intensity was correlated to annual area burned; large area burned years had higher fire intensity predictions than smaller area burned years. The reason for this difference was attributed directly to the weather variable frequency distribution, which was shifted towards more extreme values in years in which large areas burned. During	The cited article suggests that weather is the primary factor affecting wildfire size in subalpine forests near the boreal forest ecotone in Alberta, Canada. The title of the article clearly states that it focuses on subalpine forests. The Middle Fork Weiser River project vegetation treatments are located within an entirely different forest type of dry

#	Citation	Forest Service Response
	extreme weather conditions, the relative importance of fuels diminishes since all stands achieve the threshold required to permit crown fire development. This is important since most of the area burned in subalpine forests has historically occurred during very extreme weather (i.e., drought coupled to high winds). The fire behavior relationships predicted in the models support the concept that forest fire behavior is determined primarily by weather variation among years rather than fuel variation associated with stand age." Bessie, W. C. Ph.D. and E. A. Johnson Ph.D. "**The Relative Importance of Fuels and Weather on Fire Behavior in Subalpine Forests**" *Ecology*, Vol. 76, No. 3 (Apr., 1995) pp. 747-762. Published by: Ecological Society of America http://www.jstor.org/pss/1939341	ponderosa pine and Douglas-fir. In the article listed in Fuels Reduction Opposing View #1 above, James Agee says that people cite the Bessie and Johnson paper as evidence for what he calls the "weather hypothesis" (all large, severe wildfires are more weather-dependent than fuel-dependent). However, Agee points out that the Bessie and Johnson paper is specific to subalpine forests. He indicates that evidence from studies in other areas suggest that the weather hypothesis should not be generalized to all forest types. See response to Opposing View #1 above.
3.5	**Attachment 3 - Fuels reduction Opposing View #5 -** "Climatic conditions drive all big fires— not fuels. All substantial fires occur only if there is extended drought, low humidity, high temperatures and, most importantly, high winds. When conditions are "ripe" for a large blaze, fires will burn through all kinds of fuel loads. For this reason, most fires go out without burning more than a few acres; approximately 1 percent of all fires are responsible for about 95 percent to 99 percent of the acreage burned." "Under severe conditions, fires burn through all kinds of fuel loads including thinned/logged forests. Contrary to what the U.S. Forest Service has stated about the Ojo Peak Fire, local witnesses have said the fire blew right through the hotter, drier thinned forests where the cooling effect of forest canopy had been removed." Bird, Bryan "**Fires Normal Part of Ecology - Fear of fires ungrounded**" *Mountain View Telegraph*, December 20, 2007	The cited article is unsupported opinion commentary published in a newspaper in response to another person's previously published viewpoint. In the cited article, the author opposes the construction of a biomass plant near Estancia, New Mexico and criticizes the previous commenter's statements regarding wildfire risk. The articles themselves are irrelevant to the Middle Fork Weiser River project in Idaho. In response to the provided quotation above, it is well established that potential fire behavior (intensity) and severity (effect) are dependent on the interaction between fuel, weather, and physical setting (Graham et al. 2004). Any particular wildfire's growth and behavior are unique because of the infinite combinations of these factors that can occur over spatial and temporal scales (Graham et al. 2004). Of these three factors, the only thing humans can alter through management is fuel. "Severe" or extreme weather conditions can create fire behavior that would burn through or breach most fuel treatments. Thus, realistic objectives for fuel treatments include reducing the likelihood of crown fire and other fire behavior that would lead to undesirable future

#	Citation	Forest Service Response
	http://www.wildearthguardians.org/library/paper.asp?nMode=1&nLibraryID=567	conditions.
3.6	**Attachment 3 - Fuels reduction Opposing View #6 -** "The Forest Service is using the fear of wildfires to allow logging companies to remove medium-and large-diameter trees that they can sell, rather than just the small trees and brush that can make fires more severe. There is little evidence to show that such logging will prevent catastrophic fires; on the contrary, logging roads and industrial logging cause wildfires. Bush is a well known supporter of the timber industry and has accepted huge sums of money from wealthy timber company leaders. He is promoting misinformation about forest fires in order to benefit timber industry campaign contributors." "**Bush Fire Policy: Clearing Forests So They Do Not Burn**" *FOREST CONSERVATION NEWS TODAY*, August 27, 2002 http://forests.org/archived_site/today/recent/2002/tinorefl.htm	Conjecture/opinion and outside the scope of the proposed actions for Middle Fork Weiser River project.
3.7	**Attachment 3 - Fuels reduction Opposing View #7 -** "As someone with first-hand experience in fire hazard reduction and first-hand knowledge of the forest management field, as well as someone with lifelong roots in the Durango community, I am abhorred by the destruction, nearly amounting to clear cutting, that is taking place around our community under the guise of "fire hazard reduction." " Coe, Nathan J. **"Forestry shouldn't be an 'industry' "** *Durango Herald*, February 12, 2011 http://www.durangoherald.com/article/20110213/OPINION03/702139987/Forestry-shouldn%E2%80%99t-be-an-%E2%80%98industry%E2%80%99	The cited article is opinion commentary published in a Colorado newspaper criticizing what appears to be ongoing timber harvest near Durango, Colorado for the purpose of fuels reduction. This article is irrelevant to the Middle Fork Weiser River project in Idaho. Clearcutting is not included in the Middle Fork Weiser River project. A combination of prescribed burning and mechanical treatments is prescribed to restore stand structures and compositions more likely to support low and mixed severity wildfire.

#	Citation	Forest Service Response
3.8	**Attachment 3 - Fuels reduction Opposing View #8 -** "First, most large fires are climatic/weather driven events, not fuels driven. Extended drought, high winds, high temperatures and low humidity enable fires to burn through all fuel loadings. Many of the large Western fires in recent years were in forests that had been previously logged and/or thinned, with little apparent effect on fire spread or severity." Forest Policy Research paper 2008 **"Montana: Blackfoot Clearwater Stewardship Proposal is all about selling out to Pyramid lumber"** http://forestpolicyresearch.org/2008/12/19/blackfoot-clearwater-	The cited article is unsupported opinion commentary that questions the effectiveness of thinning to reduce fire hazard. Please see responses to Opposing View #1, 3, 4, 5, and 9. Fuel modeling suggests the reduction of surface and ladder fuels, along with the separation of tree crowns prescribed in the Middle Fork Weiser River vegetation treatments, will decrease the risk of high severity crown fire.
3.9	**Attachment 3 - Fuels reduction Opposing View #9 -** "most large fires are climatic/weather driven events, not fuels driven. Extended drought, high winds, high temperatures and low humidity enable fires to burn through all fuel loadings." Forest Policy Research paper 2008 **"California: Too often thinning treatments tend to increase fire hazards"** http://forestpolicyresearch.org/2008/12/19/california-too-often-thinning-treatments-tend-to-increase-fire-hazards/	The provided quotation is not contained within the cited article. This article cites a study that suggests that mechanical thinning, followed by prescribed fire to reduce surface fuels, is effective in creating stands that are more resistant to severe fire effects. The article emphasizes the importance of treating surface fuels with prescribed fire following thinning activities to reduce future fire severity and spread. The Forest Service agrees. The Middle Fork Weiser River project includes thinning from below followed by prescribed burning to reduce surface fuels.

#	Citation	Forest Service Response
3.10	**Attachment 3 - Fuels reduction Opposing View #10 -** "The primary driver of fire is not beetle kill. It's climate," said Barry Noon, a wildlife ecology professor at Colorado State University and an author of the report. "It's drought and temperature." "The report was authored by Noon; Clark University professor Dominik Kulakowski ; Scott Black, executive director of the Xerces Center for Invertebrate Conservation and Dominick DellaSala, president and chief scientist for the National Center for Conservation Science and Policy." Frey, David "**Logging Won't Halt Beetles, Fire, Report Says**" *NewWest.net*, 3-03-10 http://www.newwest.net/topic/article/logging_wont_halt_beetles_fire_report_says/C41/L41/	This article cites a report entitled "Insects and Roadless Forests: A Scientific Review of Causes, Consequences, and Management Alternatives", issued by a conservation group that specifically addresses a proposal to exempt National Forest roadless areas in Colorado from protections under the 2001 Roadless Area Conservation Rule. The authors suggest that mechanical treatments in roadless areas will not likely reduce forest susceptibility to beetle outbreaks or reduce the risk of fires, especially the risk of fires to communities. The Middle Fork Weiser River project does not include salvage of dead and dying trees, nor does it include timber harvest or road construction in roadless areas. Also see responses to Opposing View Point #s 1, 3, 4, 5, and 8.
3.11	**Attachment 3 - Fuels reduction Opposing View #11 -** "Extensive areas of dead trees have understandably led to widespread concern about the increased risk for forest fires," said Dominik Kulakowski, one of the report's authors and a professor of geography and biology at Clark University in Worcester, Mass. "This is a logical concern, but the best available science indicates that the occurrence of large fires in lodgepole pine and spruce-fir forests is mainly influenced by climatic conditions, particularly drought." " Gable, Eryn "**Battling beetles may not reduce fire risks – report**" The Xerces Society Land Letter, March 4, 2010 http://www.xerces.org/2010/03/04/battling-beetles-may-not-reduce-fire-risks-report/	This article cites the same report as does the article in Opposing View #10 (see response above). The article is not applicable to the Middle Fork Weiser River project. Middle Fork Weiser River vegetative treatments are proposed in dry ponderosa pine and Douglas-fir forest types, not the lodgepole pine and spruce-fir forest types discussed in the cited report and identified in the supplied quotation.

#	Citation	Forest Service Response
3.12	**Attachment 3 - Fuels reduction Opposing View #12 -** "Reducing burnable biomass, however, does not eliminate wildfires, because fuel reduction does not directly alter the dryness of the biomass or the probability of an ignition." Gorte, Ross W. Ph.D. ***"Wildfire Damages to Homes and Resources: Understanding Causes and Reducing Losses"*** A CRS report for Congress, June 2, 2008 http://www.nationalaglawcenter.org/assets/crs/RL34517.pdf	The cited article is a report prepared for Congress that provides an overview of the nature of wildfires followed by a discussion of the options for protecting structures, wildlands, and natural resources from wildfires. Some of the options discussed include those prescribed in the Middle Fork Weiser River project (e.g. thinning and prescribed burning). In response to the quotation provided, elimination of wildfire is not an objective. At the beginning of the paragraph where this quotation is found, the author states that the principal goal for land and resource protection is to reduce the damages caused by wildfire, which he says can be best achieved by reducing burnable biomass.
3.13	**Attachment 3 - Fuels reduction Opposing View #13 -** "Most of the trees that need to be removed to reduce accumulated fuels are small in diameter and have little or no commercial value." "Mechanically removing fuels (through commercial timber harvesting and other means) can also have adverse effects on wildlife habitat and water quality in many areas. Officials told GAO that, because of these effects, a large-scale expansion of commercial timber harvesting alone for removing materials would not be feasible. However, because the Forest Service relies on the timber program for funding many of its activities, including reducing fuels, it has often used this program to address the wildfire problem. The difficulty with such an approach, however, is that the lands with commercially valuable timber are often not those with the greatest wildfire hazards." Government Accounting Office "**Western National Forests: A Cohesive Strategy is Needed to Address Catastrophic Wildfire Threats**" *GAO/RCED-99-65* http://www.gao.gov/archive/1999/rc99065.pdf	Report to the Subcommittee on Forest and Forest Health, Committee on Resources, House of Representatives on the need for a cohesive strategy on catastrophic wildfire threats. Scientists and agency officials attribute this (on the dry eastside forests) to long periods of fire suppression resulting in denser forests, shifts in tree species composition, and increases in insects and disease. A need of the Middle Fork Weiser River project is to reduce surface fuels loads to levels which minimize the danger and difficulty of suppressing future wildfires, and enhance future forest resiliency. The Middle Fork Weiser River project units with fuels objectives are designed to reduce the probability of extreme fire behavior within the treated areas. Full disclosure of the analysis of fire and fuels affects can be found in the FEIS, Chapter 3, Section 3.3.
3.14	**Attachment 3 - Fuels reduction Opposing View #14 -** "In April 1999, the General Accounting Office issued a report that raised serious questions about the use of timber sales as a tool of fire	The Sierra Nevada Framework is specific to more dry (xeric) forest communities in California and not the interior Pacific Northwest. The

#	Citation	Forest Service Response
	management. It noted that "most of the trees that need to be removed to reduce accumulated fuels are small in diameter" -- the very trees that have 'little or no commercial value.' " "As it offers timber for sale to loggers, the Forest Service tends to 'focus on areas with high-value commercial timber rather than on areas with high fire hazards,' the report said. Its sales include 'more large, commercially valuable trees' than are necessary to reduce the so-called accumulated fuels (in other words, the trees that are most likely to burn in a forest fire)." "The truth is that timber sales are causing catastrophic wildfires on national forests, not alleviating them. The Sierra Nevada Ecosystem Project Report, issued in 1996 by the federal government, found that 'timber harvest, through its effects on forest structure, local microclimate and fuel accumulation, has increased fire severity more than any other recent human activity.' The reason goes back to the same conflict that the G.A.O. found: loggers want the big trees, not the little ones that act as fuel in forest fires." "After a 'thinning' timber sale, a forest has far fewer of the large trees, which are naturally fire-resistant because of their thick bark; indeed, many of these trees are centuries old and have already survived many fires. Without them, there is less shade. The forest is drier and hotter, making the remaining, smaller trees more susceptible to burning. After logging, forests also have accumulations of flammable debris known as "slash piles" -- unsalable branches and limbs left by logging crews." Hanson, Chad Ph.D., "**Commercial Logging Doesn't Prevent Catastrophic** **Attachment 3 - Fires, It Causes Them**." Published in the *New York Times*, May 19, 2000 http://www.commondreams.org/views/051900-101.htm	proposed activities for the project are not intended to "prevent catastrophic fires", but rather to alter fire/fuels behavior and profiles. The Middle Fork Weiser River project will move forest stands toward desired conditions as described in the Forest Plan by returning fire to the ecosystem and promoting large tree forest structure mixed with a mosaic of size classes. The goal is to improve growth, species composition, and resiliency to insects, disease, and fire.

#	Citation	Forest Service Response
3.15	**Attachment 3 - Fuels reduction Opposing View #15 -** "Emerging science demonstrates that the real culprit for creating more wildfires — including southern California's blazes — is not "fuels" but climate and weather. Climate change simply means we must learn to live with more wildfires. Humankind can be pretty smart (we made it to the Moon), but we can also be pretty stupid (we're destroying the lungs of the planet for profit). One thing, however, is certain: Mother Nature knows best. So let's be responsible and stop logging the publicly owned forests, let them recover and let God and nature back in." Hermach, Tim. "**The Skinny on Thinning, Should we save the forest from itself**?" Published by the *Eugene Weekly Viewpoint*, 11/1/07 http://www.forestcouncil.org/tims_picks/view.php?id=1211	The cited article is unsupported opinion commentary written by the executive director of the Native Forest Council in opposition to fuels reduction treatments that involve commercial tree removal. See responses to Opposing Views 1, 3, 4, 5, and 8.
3.16	**Attachment 3 - Fuels reduction Opposing View #16 -** "In general, rate of spread and flame length were positively correlated with the proportion of area logged (hereafter, area logged) for the sample watersheds. Correlation coefficients of area logged with rate of spread were > 0.57 for five of the six river basins (table 5). Rate of spread for the Pend Oreille and Wenatchee River basins was strongly associated (r-0.89) with area logged. Correlation of area logged with flame length were > 0.42 for four of six river basins (table 5). The Deschutes and Methow River basins showed the strongest relations. All harvest techniques were associated with increasing rate of spread and flame length, but strength of the associations differed greatly among river basins and harvesting methods." (pg.9) "As a by-product of clearcutting, thinning, and other tree-removal activities, activity fuels create both short- and long-term fire hazards to ecosystems. The potential rate of spread and intensity of fires associated with recently cut logging residues is high, especially the first year or two as the material decays. High fire-behavior hazards associated with the residues can extend, however, for many years depending on the tree. Even though	The citation references the effects of logging, as a fuels treatment, on wildfire intensity and rates of spread. The Middle Fork Weiser River project will move forest stands toward desired conditions as described in the Forest Plan by returning fire to the ecosystem and promoting large tree forest structure mixed with a mosaic of size classes. The goal is to improve growth, species composition, and resiliency to insects, disease, and fire.

#	Citation	Forest Service Response
	these hazards diminish, their influence on fire behavior can linger for up to 30 years in the dry forest ecosystems of eastern Washington and Oregon." Huff, Mark H. Ph.D.; Ottmar, Roger D.; Alvarado, Ernesto Ph.D. Vihnanek, Robert E.; Lehmkuhl, John F.; Hessburg, Paul F. Ph.D. Everett, Richard L. Ph.D. 1995. "**Historical and current forest landscapes in eastern Oregon and Washington. Part II: Linking vegetation characteristics to potential fire behavior and related smoke production**" Gen. Tech. Rep. PNW-GTR-355. USDA Forest Service, Pacific Northwest Research Station. https://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/4706/PB96155213.pdf;jsessionid=C8DDB611DB29D3716BBF313AADBA2E70?sequence=1	
3.17	**Attachment 3 - Fuels reduction Opposing View #17 -** "The notion that commercial logging can prevent wildfires has its believers and loud proponents, but this belief does not match up with the scientific evidence or history of federal management practices. In fact, it is widely recognized that past commercial logging, road-building, livestock grazing and aggressive firefighting are the sources for "forest health" problems such as increased insect infestations, disease outbreaks, and severe wildfires." "How can the sources of these problems also be their solution? This internal contradiction needs more than propaganda to be resolved. It is time for the timber industry and their supporters to heed the facts, not fantasies, and develop forest management policies based on science, not politics." Ingalsbee, Timothy Ph.D. 2000. "**Commercial Logging for Wildfire Prevention: Facts Vs Fantasies**" http://www.fire-ecology.org/citizen/logging_and_wildfires.htm	This is an opinion piece in which the author describes why he believes commercial logging does not prevent wildfires. Activities proposed in the Middle Fork Weiser River project are not intended to replace the effects of fire, but rather to alter fire/fuels behavior and profiles. Using fire and mechanical methods as vegetation management tools is in compliance with the PNF Forest Plan. The effects and limitations of this management approach were considered in the project analysis and design.
3.18	**Attachment 3 - Fuels reduction Opposing View #18 -** "Problems exist with over-generalizing the effects of fire exclusion, and	The provided quotation is not found within the cited article. It instead

#	Citation	Forest Service Response
	misapplying data derived from short-interval forest ecosystems (e.g. ponderosa pine stands) to long-interval forest ecosystems that have not missed their fire cycles yet and are still within their historic range of variability for stand-replacing fire events (e.g. high elevation lodgepole pine or fir stands)." Ingalsbee, Timothy Ph.D. 2000. "**Money to Burn: The Economics of Fire and Fuels Management, Part One: Fire Suppression**. "An American Lands Alliance publication. www.fire-ecology.org/research/money_to_burn.html	comes from another of Mr. Ingalsbee's articles, entitled, "Ecological Assessments Should Be Required Prior to Fuels Reduction or Restoration Projects". In the next sentence the author writes, "Fire/fuels management prescriptions should reflect current conditions, and there should be no treatments without prior collection of site-specific field data." The Middle Fork Weiser River project is consistent with the author's recommendations. Site-specific assessments have been completed for each treatment area. Silvicultural prescriptions have been tailored to address the existing conditions to meet site-specific objectives. The Middle Fork Weiser River project addresses the restoration needs in the dry ponderosa pine and Douglas-fir forest types in the Middle Fork Weiser River project area. The author also suggests that fuels reduction should be recognized as a means of attaining the goals of ecosystem restoration and protection. The Middle Fork Weiser River project is consistent with this assessment as it uses fuels reduction actions to restore forest stand resilience.
3.19	**Attachment 3 - Fuels reduction Opposing View #19 -** "Congress should prohibit the use of commercial timber sales and stewardship contracts for hazardous fuels reduction projects. Commercial logging removes the most ecologically valuable, most fire-resistant trees, while leaving behind highly flammable small trees, brush, and logging debris. The use of "goods for services" stewardship contracts also encourages logging larger, more fire-resistant trees in order to make such projects attractive to timber purchasers. The results of such logging are to increase fire risks and fuel hazards, not to reduce them. The financial incentives for abusive logging under the guise of "thinning" must be eliminated." Ingalsbee, Timothy Ph.D., "**National Fire Plan Implementation: Forest Service Failing to Protect Forests and Communities**" American Lands Alliance, March 2002 http://www.fire-ecology.org/policy/ALA_fire_policy_2002.html	The cited article is 10 year old opinion commentary that suggests Congress and the Forest Service adopt the author's fire policy recommendations. Modifying national policies is outside the scope of the Middle Fork Weiser River project. However, the Middle Fork Weiser River vegetation treatments will retain the largest, most fire-resistant trees as well as the fire-resistant species (ponderosa pine, Douglas-fir, and Western larch). Natural and activity-generated fuels will be treated through prescribed burning.

#	Citation	Forest Service Response
3.20	**Attachment 3 - Fuels reduction Opposing View #20 -** "Thus, the use of commercial logging for fire hazard reduction poses yet another paradox: Logging removes the trees that normally survive fires, leaves behind the trees that are most often killed by fire, increases flammable fuel loads, and worsens fire weather conditions." (pg. 5) Ingalsbee, Timothy Ph.D. "**The wildland fires of 2002 illuminate fundamental questions about our relationship to fire**." *The Oregon Quarterly*, Winter 2002 http://fireecology.org/research/wildfire_paradox.pdf	Conjecture/opinion. The Middle Fork Weiser River project does not propose to remove long-lived, early seral species (trees most likely to survive fires) in the proposed treatment areas unless needed to meet desired conditions. See the legacy tree guide included as Appendix 7 of the FEIS.
3.21	**Attachment 3 - Fuels reduction Opposing View #21 -** "In the face of growing public scrutiny and criticism of the agency's logging policies and practices, the Forest Service and their enablers in Congress have learned to mask timber sales as so-called 'fuels reduction' and 'forest restoration' projects. Yet, the net effect of these logging projects is to actually increase fire risks and fuel hazards." "Decades of encouraging private logging companies to take the biggest, oldest, most fire-resistant trees from public lands, while leaving behind a volatile fuel load of small trees, brush, weeds, stumps and slash has vastly increased the flammability of forestlands." "In addition to post-fire salvage logging, the Forest Service and timber industry advocates in Congress have been pushing pre-fire timber sales, often falsely billed as hazardous fuels reduction or 'thinning' projects, to lower the risk or hazard of future wildfires. In too many cases, these so-called thinning projects are logging thick-diameter fire-resistant overstory trees instead of or in addition to cutting thin-sized fire-susceptible understory trees. The resulting logging slash and the increased solar and wind exposure can paradoxically increase the fuel hazards and fire risks." Ingalsbee, Timothy Ph.D. **"Fanning the Flames! The U.S. Forest Service: A Fire-Dependent Bureaucracy."** *Missoula Independent.* Vol. 14 No. 24, June 2003	Conjecture/opinion. The Middle Fork Weiser River project does not propose to remove long-lived, early seral species (trees most likely to survive fires) in the proposed treatment areas unless needed to meet desired conditions. See the legacy tree guide included as Appendix 7 of the FEIS.

#	Citation	Forest Service Response
	http://www.fire-ecology.org/research/USFS_fire_dependent.html	
3.22	**Attachment 3 - Fuels reduction Opposing View #22 -** "More than any other recent human activity, the legacy of commercial timber extraction has made public forests more flammable and less resilient to fire. Firstly, clearcut and high-grade logging have historically taken the largest, most fire-resilient, most commercially-valuable trees, and left behind dead needles and limbs (logging debris called "slash"), along with smaller trees and brush that are less commercially valuable but more flammable than mature and old-growth trees. The net effect is to increase the amount of available hazardous fuel." "Secondly, the removal of large overstory trees also changes the microclimate of logged sites, making them hotter, drier, and windier, which increases the intensity and rate of spread of wildfires. Third, the creation of densely-stocked even-aged plantations of young conifers made sites even more flammable since this produced a solid mass of highly combustible conifer needles within easy reach of surface flames. These changes in the fuel load, fuel profile, and microclimate make logged sites more prone to high-intensity and high-severity wildfires." Ingalsbee, Timothy Ph.D. 2005. "**A Reporter's Guide to Wildland Fire**." Published by the Firefighters United for Safety, Ethics, and Ecology (FUSE), January 2005 http://www.commondreams.org/news2005/0111-14.htm	Existing forest composition is discussed in the FEIS. One of the objectives of the Middle Fork Weiser River project is to develop resilient forest conditions, primarily by maintaining and increasing long-lived early seral species across the landscape, including ponderosa pine, Douglas-fir, and Western larch. Increasing the abundance of these species will contribute increased resiliency to disturbances such as fire, insects, and disease. Promoting aspen regeneration will act as natural fire breaks as well.
3.23	**Attachment 3 - Fuels reduction Opposing View #23 -** "For example, use of taxpayer dollars and resources on deficit timber sales that remove fire-resilient old-growth trees and leave behind untreated logging slash, violate federal environmental laws in planning or implementation, or are deceptively labeled as "fuels reduction" or "forest restoration" projects when they actually increase fuel hazards or degrade ecological integrity, is an *ethical* as well as an ecological issue. These kind of anti-ecological, unethical forest management projects also adversely affect firefighter and community safety by diverting limited federal dollars	The cited article provides an overview of the FUSEE organization and its mission. The Middle Fork Weiser River project proposed vegetation treatments should retain large, fire-resistant, legacy trees. Activity generated slash will be treated by prescribed burning, mastication, or biomass.

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	away from genuine hazardous fuels reduction activities, and by degrading ecological conditions in ways that increase wildfire rate of spread, intensity, or severity." Ingalsbee, Timothy Ph.D. and Joseph Fox, Ph.D. "**Firefighters United for Safety, Ethics, and Ecology (FUSEE): Torchbearers for a New Fire Management Paradigm**" A poster presentation at the Third International Fire Ecology and Management Congress, Association for Fire Ecology November 13-17, 2006 http://fusee.org/docs/AFE_FUSEE_display_abstract.pdf	
3.24	**Attachment 3 - Fuels reduction Opposing View #24 -** "History, not science, refutes the claim that logging helps to prevent forest fires. The forests of the West are far more vulnerable to fire due to a century of industrial logging and fire suppression. Logging has removed most of the older, fire-resistant trees from the forests. Fire suppression has encouraged many smaller and more flammable trees, brush and dense plantations to fill the holes. Logging has set the forests of the West up to burn big and hot. More logging will not fix this." Keene, Roy "**Logging does not prevent wildfires**" Guest Viewpoint, the Eugene *Register Guard* January 11, 2009 http://www.highbeam.com/doc/1G1-192070397.html	Conjecture/opinion. Activities proposed in the Middle Fork Weiser River project are not intended to replace the effects of fire, but rather to alter fire/fuels behavior and profiles. Using fire and mechanical methods as vegetation management tools is in compliance with the Forest Plan. The effects and limitations of this management approach were considered in the project analysis and design.

#	Citation	Forest Service Response
3.25	**Attachment 3 - Fuels reduction Opposing View #25 -** "Fear of wildfire is heavily used to sell these forest "restoration" schemes. Logging has not been proven, in practice, to reduce fire frequency or intensity. Historically, the largest, most destructive blazes, like the Tillamook conflagration, were caused from logging or fueled by slash. Unlogged forests, cool and shaded, are typically more fire resistant than cut over, dried-up stands choked with slash and weeds. Large-scale logging (by any name) has devalued our forests, degraded our waters, damaged soils, and endangered a wide variety of plants and animals. How will the current round of politically and environmentally propelled 'restorative' logging proposals differ, in practice, from past logging regimes?" Keene, Roy **Restorative Logging? "More rarity than reality"** Guest Viewpoint, the Eugene *Register Guard* March 10, 2011 http://eugeneweekly.com/2011/03/03/views3.html	Conjecture/opinion. Activities proposed in the Middle Fork Weiser River project are not intended to replace the effects of fire, but rather to alter fire/fuels behavior and profiles. Using fire and mechanical methods as vegetation management tools is in compliance with the Forest Plan. The effects and limitations of this management approach were considered in the project analysis and design.
3.26	**Attachment 3 - Fuels reduction Opposing View #26 -** "There is a gathering body of evidence that large wildfires are not determined by "unnatural" fuel loading. Lodgepole pine, subalpine fir, and aspen depend on infrequent, stand-replacing, high intensity fires. Most of the B-D NF is well within the natural range of variability. In fact, dense forest stands may not be caused by fire exclusion, but by a series of consecutive wet years that boosted seedling survival and expanded the local range. Drought, wind, and low humidity, not fuels loads, drive large wildifires. Weather and climatic conditions are also the driving force behind expanding insect populations." Kelly, Steve Ph.D. 2007. "**Cheap Chips, Counterfeit Wilderness: Greenwashing** **Logging on Montana's Biggest National Forest**." Published by the World Prout Assembly http://www.worldproutassembly.org/archives/2007/12/cheap_chips_cou.html	

#	Citation	Forest Service Response
3.27	**Attachment 3 - Fuels reduction Opposing View #27 -** "The Congressional Research Service (CRS) recently addressed the effect of logging on wildfires in an August 2000 report and found that the current wave of forest fires is not related to a decline in timber harvest on Federal lands. From a quantitative perspective, the CRS study indicates a very weak relationship between acres logged and the extent and severity of forest fires. To the contrary, in the most recent period (1980 through 1999) the data indicate that fewer acres burned in areas where logging activity was limited." "Qualitative analysis by CRS supports the same conclusion. The CRS stated: "[T]imber harvesting removes the relatively large diameter wood that can be converted into wood products, but leaves behind the small material, especially twigs and needles. The concentration of these fine fuels on the forest floor increases the rate of spread of wildfires." Similarly, the National Research Council found that logging and clearcutting can cause rapid regeneration of shrubs and trees that can create highly flammable fuel conditions within a few years of cutting." Laverty, Lyle, USDA Forest Service and Tim Hartzell U.S. Department of the Interior "**A Report to the President in Response to the Wildfires of 2000**", September 8, 2000. http://www.fs.fed.us/emc/hfi/president.pdf	The citation is a congressional report that summarizes a Congressional Research Service study of the effects of logging on wildfire risk. Activities proposed in the Middle Fork Weiser River project are not intended to replace the effects of fire, but rather to alter fire/fuels behavior and profiles. Using fire and mechanical methods as vegetation management tools is in compliance with the PNF Forest Plan. The effects and limitations of this management approach were considered in the project analysis and design. The Middle Fork Weiser River project proposed vegetation treatments should retain large, fire-resistant, legacy trees. Activity generated slash will be treated by prescribed burning, mastication, or biomass.
3.28	**Attachment 3 - Fuels reduction Opposing View #28 -** "I will turn first to forest thinning aimed at reducing fire risks. There is surprisingly little scientific information about how thinning actually affects overall fire risk in national forests." "How can it be that thinning could increase fire risks? First, thinning lets in sunlight and wind, both of which dry out the forest interior and increase flammability. Second, the most flammable material - brush, limbs, twigs, needles, and saplings - is difficult to remove and often left behind. Third, opening up forests promotes brushy, flammable undergrowth. Fourth, logging equipment	This is the text from Congressional testimony arguing against streamlined planning processes and expressing concern about potential impacts from it; irrelevant to the Middle Fork Weiser River project.

#	Citation	Forest Service Response
	compacts soil so that water runs off instead of filtering in to keep soils moist and trees healthy. Fifth, thinning introduces diseases and pests, wounds the trees left behind, and generally disrupts natural processes, including some that regulate forest health, all the more so if road construction is involved." Lawrence, Nathaniel, NRDC senior attorney "**Gridlock on the National Forests**" Testimony before the U.S. House of Representatives Subcommittee on Forests and Forest Health (Committee on Resources) December 4, 2001. http://www.nrdc.org/land/forests/tnl1201.asp	
3.29	**Attachment 3 - Fuels reduction Opposing View #29 -** "Those who would argue that this form of logging has any positive effects on an ecosystem are clearly misinformed. This type of logging has side effects related to wildfires, first and foremost being that the lumber companies aren't interested in hauling out all the smaller trees, branches, leaves, pine needles, sawdust, and other debris generated by cutting all these trees. All this debris is left on site, quickly dries out, and is far more flammable sitting dead on the ground than it was living in the trees. Smaller, non-commercially viable trees are left behind (dead) as well - creating even more highly flammable fuel on the ground. Leitner, Brian. "**Logging Companies are Responsible for the California Wildfires**." the Democratic Underground, October 30, 2003. http://www.democraticunderground.com/articles/03/10/30_logging.html	Conjecture/opinion. Activities proposed in the Middle Fork Weiser River project are not intended to replace the effects of fire, but rather to alter fire/fuels behavior and profiles. Using fire and mechanical methods as vegetation management tools is in compliance with the PNF Forest Plan. The effects and limitations of this management approach were considered in the project analysis and design. The Middle Fork Weiser River project proposed vegetation treatments should retain large, fire-resistant, legacy trees. Activity generated slash will be treated by prescribed burning, mastication, or biomass.
3.30	**Attachment 3 - Fuels reduction Opposing View #30 -** "Almost seven times more forested federal land burned during the 1987-2003 period than during the prior 17 years. In addition, large fires occurred about four times more often during the latter period." "The increases in fire extent and frequency are strongly linked to higher March-through-August temperatures and are most	The article is a brief summary of a 2006 publication entitled "Warming and Earlier Spring Increases Western U.S. Forest Wildfire Activity" written by Westerling et al. In their study, the authors compiled a database of large wildfires in the western United States forests since 1970 and compared it with hydro-climatic and land-surface data. Their study indicates that large wildfire activity increased markedly in the

#	Citation	Forest Service Response
	pronounced for mid-elevation forests in the northern Rocky Mountains. The new finding points to climate change, not fire suppression policies and forest fuel accumulation, as the primary driver of recent increases in large forest fires." "**More Large Forest Fires Linked To Climate Change**" Adapted from materials provided by the University of Arizona *ScienceDaily*, July 10, 2006 http://www.sciencedaily.com/releases/2006/07/060710084004.htm	mid-1980s, with higher large-wildfire frequency, longer wildfire durations, which they suggest is strongly associated with increased spring and summer temperatures and an earlier spring snowmelt. The authors do not discount the effect of fuels: "In some forest types, past land uses [including fire suppression] have probably increased sensitivity of current forest wildfire regimes to climatic variability through effects on the quantity, arrangement, and continuity of fuels." They further state, "The overall importance of climate in wildfire activity underscores the urgency of ecological restoration and fuels management to reduce wildfire hazards to human communities and to mitigate ecological impacts of climate change in forests that have undergone substantial alterations due to past land uses." As described in the Middle Fork Weiser River FEIS, field surveys indicate the warm, dry forest types have higher tree densities than historic conditions and a lower quantity and proportion of fire-resistant tree species likely due to past timber harvest. The Middle Fork Weiser River project will use a combination of prescribed burning and mechanical treatments to lower stand densities and favor fire-resistant, early seral tree species. These treatments will increase the likelihood of supporting low and mixed-severity wildfires and decrease the likelihood of supporting high-severity wildfires by reducing crown continuity to limit crown fire spread, reducing understory and mid-story conifers that act as ladder fuels capable of carrying surface fires into the crowns, and reducing ground fuel accumulations to reduce the heat intensity on the tree boles and roots. Resulting stand structures and compositions will also reduce susceptibility to insect and disease.
3.31	**Attachment 3 - Fuels reduction Opposing View #31 -** "We inferred climate drivers of 20th-century years with regionally synchronous forest fires in the U.S. northern Rockies. We derived annual fire extent from an existing fire atlas that includes 5038 fire polygons recorded from 12070086 ha, or 71% of the forested land in Idaho and Montana west of the Continental Divide. The 11 regional-fire years, those exceeding the 90th percentile in annual fire extent from 1900 to 2003 (>102314 ha or ~1% of the fire atlas recording area), were concentrated early and late in the century (six from 1900 to 1934 and five from 1988 to 2003). During both periods, regional-fire years were ones when warm springs were	The citation is a research study conducted in Idaho and western Montana to compare fire scars to tree ring reconstructions of climate. The results suggest that regional fire years occurred when spring-summers were significantly warm and summers were significantly warm-dry. Years when fire was recorded at only a few of the study sites appear to have occurred under a broad range of climate conditions. It is unclear what the commenter's point was in including this citation as it contains no discussion of land management actions. It has long been established that weather is one of the principal factors in fire behavior.

#	Citation	Forest Service Response
	followed by warm, dry summers and also when the Pacific Decadal Oscillation (PDO) was positive. Spring snowpack was likely reduced during warm springs and when PDO was positive, resulting in longer fire seasons. Regional-fire years did not vary with El Nino-Southern Oscillation (ENSO) or with climate in antecedent years. The long mid-20th century period lacking regional-fire years (1935-1987) had generally cool springs, generally negative PDO, and a lack of extremely dry summers; also, this was a period of active fire suppression. The climate drivers of regionally synchronous fire that we inferred are congruent with those of previous centuries in this region, suggesting a strong influence of spring and summer climate on fire activity throughout the 20th century despite major land-use change and fire suppression efforts. The relatively cool, moist climate during the mid-century gap in regional-fire years likely contributed to the success of fire suppression during that period. In every regional-fire year, fires burned across a range of vegetation types. Given our results and the projections for warmer springs and continued warm, dry summers, forests of the U.S. northern Rockies are likely to experience synchronous, large fires in the future." Morgan, Penelope Ph.D., Emily K. Heyerdahl Ph.D., and Carly E. Gibson 2008 "**Multi-season climate synchronized forest fires throughout the 20th century, Northern Rockies**", *Ecology*, 89, 3: 717-728. http://www.firelab.org/index.php?option=com_jombib&task=showbib&id=343	
3.32	**Attachment 3 - Fuels reduction Opposing View #32 -** "Still, forestry experts warned in the 2000 plan that logging should be used carefully and rarely; in fact, the original draft states plainly that the "removal of large merchantable trees from forests does not reduce fire risk and may, in fact, increase such risk." "Now, critics charge that the Bush administration is ignoring that warning. Neil Lawrence, a policy analyst with the Natural	Conjecture/opinion. This is an opinion piece in which the author describes why he believes commercial logging does not prevent wildfires. Activities proposed in the Middle Fork Weiser River project are not intended to replace the effects of fire, but rather to alter fire/fuels behavior and profiles.

#	Citation	Forest Service Response
	Resource Defense Council, claims that Washington has taken a far more aggressive approach to incorporating commercial logging in its wildfire prevention plans. As a result, Lawrence and other critics say, the National Fire Plan is becoming a feeding ground for logging companies. Moreover, critics claim the administration's strategy, far from protecting the lives and homes of those most at risk, could actually increase the likelihood of wildfires." Okoand Ilan Kayatsky, Dan. "**Fight Fire with Logging?**" *Mother Jones*, August 1, 2002 http://www.motherjones.com/news/feature/2002/08/fireplan.html	Using fire and mechanical methods as vegetation management tools is in compliance with the PNF Forest Plan. The effects and limitations of this management approach were considered in the project analysis and design. The Middle Fork Weiser River project proposed vegetation treatments should retain large, fire-resistant, legacy trees. Activity generated slash will be treated by prescribed burning, mastication, or biomass.
3.33	**Attachment 3 - Fuels reduction Opposing View #33 -** "Fuel reduction treatments should be forgone if forest ecosystems are to provide maximal amelioration of atmospheric carbon dioxide over the next 100 years,' the study authors wrote in their conclusion. 'If fuel reduction treatments are effective in reducing fire severities in the western hemlock, Douglas-fir forests of the west Cascades and the western hemlock, Sitka spruce forests of the Coast Range, it will come at the cost of long-term carbon storage, even if harvested materials are used as biofuels.' " Oregon State University Research *Science Centric,* July 9, 2009 http://www.sciencecentric.com/news/article.php?q=09070918-forest-fire-prevention-efforts-will-lessen-carbon-sequestration-add-greenhouse-warming	The cited article is a review of a published study entitled "Forest Fuel Reduction Alters Fire Severity and Long-term Carbon Storage in Three Pacific Northwest Ecosystems" written by Stephen Mitchel, Mark Harmon and Kari O'Connell. The authors of the study used a forest ecosystem simulation model to examine the effects of fuel reduction on fire severity and the resulting long-term carbon storage among three Pacific Northwest ecosystems: the east Cascades ponderosa pine forests, the west Cascades western hemlock-Douglas-fir forests, and the Coast range western hemlock-Sitka spruce forests. Their results suggest that if fuel reduction treatments are effective in reducing fire severities in the western hemlock-Douglas-fir forest of the west Cascades and western hemlock-Sitka spruce forests of the Coast Range, it will come at the cost of long-term carbon storage even if harvested materials are utilized as biofuels. However, they suggest that the application of fuel reduction treatments may be essential for ecosystem restoration in forests with uncharacteristic levels in the ponderosa pine forest ecosystems of the east Cascades. The Middle Fork Weiser River vegetation treatments will be conducted in dry forest types where stand densities are high, which is similar to the ponderosa pine forest types of the east Cascades described in the study.
3.34	**Attachment 3 - Fuels reduction Opposing View #34 -** "While top officials blame recent fires on fuels, all the on-the-ground reports I've read focus on the weather." O'Toole Randal. "**Incentives, Not Fuels, Are the Problem**"	The cited article is opinion commentary that claims that the Forest Service exaggerates wildfire and forest fuels concerns to leverage Congress for a bigger budget. The author also claims the reason for increased fire suppression and fuel reduction costs is due to Congress

#	Citation	Forest Service Response
	Published by the Thoreau Institute http://www.ti.org/fireshort.html	providing the Forest Service a 'blank check', which he suggests offers no incentive to control costs. How Congress funds the Forest Service is outside the scope of the Middle Fork Weiser River project. In the sentence following the provided quotation, the author writes, "I am not saying there is no buildup of fuels, just that the buildup isn't as important as the popular story has led us to believe." It is well established that potential fire behavior (intensity) and severity (effect) are dependent on the interaction between fuel, weather, and physical setting (Jain and Graham 2004; Graham et al. 2004). Of those three factors, the only thing humans can alter through management is fuel. Also see response to Opposing View #3.
3.35	**Attachment 3 - Fuels reduction Opposing View #35 -** "This paper will show that built-up fuels are *not* the main reason, or even a major reason, for recent severe fires or high fire suppression costs. The weather is the prime reason for widespread fires this year as well as in 2000, 1999, and other recent years. But the major reason for increased costs is institutional: The federal land agencies, and especially the Forest Service, have a blank check to put out fires and thus have no reason to control their costs. If fuels are not the problem, then it isn't necessary to spend $400 million a year treating them." O'Toole, Randal. 2002. "**Reforming the Fire Service: An Analysis of Federal Fire Budgets and Incentives**." The Thoreau Institute. www.ti.org/fireove.pdf	The cited article is opinion commentary that is a longer version of the article cited in Opposing View #34 (see response above).
3.36	**Attachment 3 - Fuels reduction Opposing View #36 -** "Post-fire reports on individual fires make little or no mention of excess fuels. Instead, fire scientists agree that drought is the cause of the severe fires in recent years. This year's Rodeo- Chedisky Fire, the largest fire in Arizona history, was on heavily managed and thinned federal lands, not an untouched wilderness brimming with excess fuels." O'Toole, Randal. "**Money to Burn?"** *Regulation*, Winter 2002 - 2003 http://www.cato.org/pubs/regulation/regv25n4/v25n4-6.pdf	The cited article is opinion commentary that is essentially the same as what is contained in the articles of Opposing Views 34 and 35 (see responses above).

#	Citation	Forest Service Response
3.37	**Attachment 3 - Fuels reduction Opposing View #37 -** "The current focus on 'fuels' is, in itself, misguided because almost anything in a forest will burn, given the right conditions. Any fire specialist will tell you that the principal factors affecting fire are temperature and moisture, not fuels. No legislation will prevent or even reduce fires in the vast areas of the national forests and to pretend so is fraudulent." Partridge, Arthur Dean Ph.D. Testimony to the Agriculture, Nutrition and Forestry Committee United State Senate. Hearing to Review Healthy Forests Restoration Act, HR 1904 June 26, 2003 http://www.univision.co.za/offer-day-oA2A392Cr1N3B2x_2F2du3g3-music.shtml	The cited article is testimony submitted in opposition to the Healthy Forests Restoration Act. The Middle Fork Weiser River project is not proposed under this legislation. See responses to Opposing View #s 1, 3, 4, 5, and 8. The Middle Fork Weiser River vegetation treatments are not intended to prevent or reduce fires, but instead to modify fire behavior to reduce the likelihood of high severity crown fires in treated areas through the restoration of forest structure and composition in the dry ponderosa pine and Douglas-fir forest types.
3.38	**Attachment 3 - Fuels reduction Opposing View #38 -** "A number of studies have shown that for some ecosystems, the major factor determining fire intensity and size is weather and not the amount of fuel (Baker 1989, Flannigan and Harrington 1988, Haines and Sando 1969, Rothermel 1995). For example, Bessie and Johnson (1995) found that fire spread and intensity were strongly related to weather conditions and only weakly related to fuel loads in the southern Canadian Rockies. Similarly, many hundreds of the thousands of acres of forests that were intensely burned in the 1994 Tyee Fire on the Wenatchee National Forest had very low fuel loads. The Forest Service and Fish and Wildlife Service concluded that weather patterns and terrain -- not fuels -- were the major reasons why this large fire burned the way it did (U.S. Forest Service 1995, U.S. Fish & Wildlife Service 1994). Such case studies provide little evidence that salvage logging of dead and dying trees will significantly reduce wildfires." Peters, R.L., E. Frost, and F. Pace. "**Managing for forest ecosystem health: A reassessment of the forest health crisis**." *Defenders of Wildlife*. April 1996. http://www.magicalliance.org/Forests/Forest%20Health%20Evaluat	The Forest Service was unable to access the cited reference, thus the response is to the provided quotation. See responses to Opposing Views #1, 3, 4, 5, 8, 9, 18, 26, and 30. The Middle Fork Weiser River project will not salvage dead and dying trees.

#	Citation	Forest Service Response
	ed.htm	
3.39	**Attachment 3 - Fuels reduction Opposing View #39 -** "H.R 1904 does not include any specific measures to protect homes or communities. It is also inconsistent with the Western Governors' Association 10-Year Comprehensive Strategy, which does not call for any changes in existing laws. The only proven method to protect homes and communities is to reduce flammable materials in the immediate vicinity of structures, yet the definitions in H.R. 1904 would not require any activities to be near homes. Instead, the bill seeks to further subsidize the timber industry and eliminate obstacles to logging large, fire-resistant trees miles away from the nearest home. The country's top forest scientists, including the Forest Service's own scientists, have found that this kind of logging can actually increase fire risk and make fires larger and more intense." Peterson, Mike **testimony** to the Senate Agriculture, Nutrition, and Forestry Committee concerning the Healthy Forests Restoration Act, HR 1904. June 26 2003 http://agriculture.senate.gov/Hearings/testimony.cfm?id=824&wit_id=2258	The cited testimony is opinion commentary opposing the Healthy Forests Restoration Act as written for various reasons. This article is not relevant to the Middle Fork Weiser River project because the project is not proposed under this legislation. Protecting homes and communities is not the sole purpose of the Middle Fork Weiser River project vegetation treatments. Treatments are focused on restoring the resilience of the dry forest types in the Middle Fork Weiser River resource area. Large fire-resistant legacy trees should be retained.
3.40	**Attachment 3 - Fuels reduction Opposing View #40 -** "We question the validity of thinning as a means both to reduce the threat of wildfire and to restore historic forest structure in the absence of site-specific data collection on past and present landscape conditions." Platt, Rutherford V. Ph.D., Thomas T. Veblen Ph.D., and Rosemary L. Sherriff **"Are Wildfire Mitigation and Restoration of Historic Forest Structure Compatible? A Spatial Modeling Assessment"** Published Online: by the by Association of American Geographers. Sep. 8, 2006	The citation is the abstract for the referenced document. The commenter fails to demonstrate how the findings/conclusions of this study are relevant to the Middle Fork Weiser River project. Hazardous fuel reductions are just part of the purpose and need for the Middle Fork Weiser River project. A primary goal of this project is to maintain and increase long-lived early seral species across the landscape, including ponderosa pine, western larch, and Douglas-fir. Increasing the abundance of these species will contribute increased resiliency to disturbances such as fire, insects, and disease.

#	Citation	Forest Service Response
	http://www.ingentaconnect.com/content/routledg/anna/2006/00000096/00000003/art00001	
3.41	**Fuels reduction Opposing View #41 -** "While most of us have suffered with the unavoidable fire-related anxieties, we have also been impressed by the hard work and heroism of both neighbors and anonymous firefighters. But others have tried to profit from the fires and the primordial fears they evoke. The forest products industry has been in the lead in this exploitation of other people's hardtimes. The forest products industry wants access as cheaply as it can get it to as much wood fiber as possible. It once had privileged access to forested public lands. As the frontier economy has faded and government give-aways have fallen out of political favor, the forest products industry's privileged grip on public resources has begun to slip. The current forest fires offer them an opportunity to try to regain some of their lost clout. The fires, timber industry spokespersons claim, are the result of restrictions on commercial logging on public lands. If all of these lands had been logged, they assert, the fires would not be burning. It is the federal government and the environmentalists they are in cahoots with who have caused the fires that now threaten us. As one timber industry advocate baldly said, "I never saw a clearcut burn." Nothing could be further from the truth. Of course clearcuts burn. When long, hot summers dry out the grasses, brush, and logging wastes, they can flare explosively. When they grow thick with closely packed young trees, they present exactly the fire danger we are wrestling with now. The logging roads provide human access that is the source of the vast majority of forest fires. If roading and logging eliminated the threat of wildfire, most of the fires that threaten us now would not be burning. Look at where these fires are: They are largely burning on the forest-urban interface in areas adjacent to intense human activity. In Western	The cited article is 12-year old opinion commentary. The objective of the Middle Fork Weiser River vegetation treatments is not to eliminate the threat of wildfire. Treatments are intended to restore forest structure and composition in the dry ponderosa pine and Douglas-fir forest types to improve forest stand resilience. As part of the restoration focus, treatments will modify fire behavior to increase the likelihood that future fires will remain on the ground and burn at a low to mixed severity, which is more characteristic of historic conditions. Resulting stand structures and compositions will also reduce susceptibility to insects and disease.

#	Citation	Forest Service Response
	Montana, for instance, the fires are burning in the forests adjacent to some of the rapidly growing residential areas in the nation, the Bitterroot, Helena, and Clark Fork Valleys. These are not roadless areas that have never been logged. Quite the contrary, they are areas that were roaded and logged in the past. Those roads often have then provided access for the human activity that now dominates these areas, including the home building, residential settlement of the last two decades, and recreational activity. The trees now burning are usually second growth that followed past logging." Power, Thomas Ph.D. **"Thee Politics of Forest Fires -- The Abuse of Other People's Hard Times."** 8/15/2000 3.42Thomas Michael Power is the Professor and Chairman of the Eco3.43nomics Department, University of Montana http://www.forwolves.org/ralph/tompower.htm	
3.42	**Attachment 3 - Fuels reduction Opposing View #42 -** "It is well established that logging and roadbuilding often increase both fuel loading and fire risk. For example, the Sierra Nevada Ecosystem Project (SNEP) Science Team (1996) concluded that "timber harvest…. has increased fire severity more than any other recent human activity" in the Sierra Nevada. Timber harvest may increase fire hazard by drying of microclimate associated with canopy opening and with roads, by increases in fuel loading by generation of activity fuels, by increases in ignition sources associated with machinery and roads, by changes in species composition due to opening of stands, by the spread of highly flammable non native weeds, insects and disease, and by decreases in forest health associated with damage to soil and residual trees (DellaSala and Frost, 2001; Graham et al., 2001; Weatherspoon et al., 1992; SNEP Science Team, 1996). Indeed a recent literature review reported that some studies have found a positive correlation between the occurrence of past logging and present fire hazard in some forest types in the Interior Columbia Basin (DellaSala and Frost, 2001)."	The letter goes on to state: "CNPS has based all of our fire management advocacy on the principles discussed above. We have never opposed fuels treatment proposals that are consistent with these principles. We have opposed logging projects in environmentally sensitive areas, such as roadless areas and late seral forests, that are not designed to reduce fire hazard to lives and property, but to remove the largest and most profitable trees available on national forest lands. Such projects are usually ecologically unnecessary and generally do more harm than good, both by reducing forest health and increasing fire danger." (Emphasis added) The Middle Fork Weiser River project does not propose logging in roadless or other "environmentally sensitive" areas.

#	Citation	Forest Service Response
	Roberson, Emily B. Ph.D., Senior Policy Analyst, California Native Plant Society Excerpt from a letter to Chief Dale Bosworth and 5 members of congress, 2002 http://www.plantsocieties.org/PDFs/Fire%20letter%20CNPS%208.02%20letterhead.pdf	
3.43	**Attachment 3 - Fuels reduction Opposing View #43 -** "No evidence suggests that spruce–fir or lodgepole pine forests have experienced substantial shifts in stand structure over recent decades as a result of fire suppression. Overall, variation in climate rather than in fuels appears to exert the largest influence on the size, timing, and severity of fires in subalpine forests (Romme and Despain 1989, Bessie and Johnson 1995, Nash and Johnson 1996, Rollins et al. 2002). We conclude that large, infrequent standreplacing fires are "business as usual" in this forest type, not an artifact of fire suppression." (Pg. 666) "Variation in daily area burned was highly correlated with the moisture content of 100-hour (2.5- to 7.6- cm diameter) and 1000-hour dead fuels (Turner et al. 1994). Once fuels reached critical moisture levels later in the season, the spatial pattern of the large, severe stand-replacing fires was controlled by weather (wind direction and velocity), not by fuels, stand age, or firefighting activities (Minshall et al. 1989,Wakimoto 1989, Turner et al. 1994)." (Pg. 666) Schoennagel, Tania Ph.D., Thomas T. Veblen Ph.D., and William H. Rommie Ph.D. "**The Interaction of Fire, Fuels, and Climate across Rocky Mountain Forests**" *Bioscience*, July 2004 / Vol. 54 No. 7 http://www.montana.edu/phiguera/GEOG430/PurdyFireFieldTrip/Schoennagel_et_al_2004_Bioscience.pdf	The cited article is a case study of large wildfires in the Rocky Mountains to assess the potential effectiveness of fuel reduction treatments across a range of major forest types. The authors discuss the differences between high, mixed, and low severity fire regimes and the different forest types characteristic of each one. They conclude that fire regimes, climate, fuel type and abundance, and stand structure vary significantly across the Rocky Mountain region and thus suggest that a "one-size-fits-all" approach to reducing wildfire hazards in the Rocky Mountain region is unlikely to be effective. This article was used in the Middle Fork Weiser River analysis and is cited in the References section. The quotations provided by the commenter refer to subalpine forests characterized by high severity fire regimes. These quotations are not applicable to the Middle Fork Weiser River project because vegetation treatments are focused in the dry ponderosa pine and Douglas-fir habitat types which are characterized by low to mixed severity fire regimes. Within low-severity fire regimes, the authors suggest that "reduction of ladder fuels through mechanical thinning and prescribed fire can effectively reduce the unprecedented occurrence of extensive crown fires and restore the historical fire regime in dry, low-elevation ponderosa pine forests". Within mixed severity fire regimes, the authors conclude, "fuel reduction treatments (mechanical thinning and prescribed burning) may effectively reduce fire severity under moderate weather conditions, but these treatments may not effectively mitigate fire behavior under extreme weather conditions." The treatments proposed in higher subalpine fir stands are designed to promote and restore whitebark pine and not as fuel reduction treatments.

#	Citation	Forest Service Response
3.44	**Attachment 3 - Fuels reduction Opposing View #44 -** "Fire, just like insects and disease, are a natural and beneficial part of forest ecosystems and watersheds. Without these natural processes the forest ecosystems quickly degrade. Excessive logging removes and reduces cooling shade adding to the hotter, drier forests along with logging debris creating a more flammable forest. Current "forest management" practices, road building and development cause forest fires to rage for hundreds of miles." Strickler, Karyn and Timothy G. Hermach, "**Liar, Liar, Forests on Fire: Why Forest Management Exacerbates Loss of Lives and Property**" Published by *CommonDreams.org*, October 31, 2003 http://www.commondreams.org/scriptfiles/views03/1031-10.htm	The role of fire, insects and disease are discussed in the FEIS (Section 3.2.4 and 3.3.3). The Middle Fork Weiser River project is not being proposed under the authority of the Healthy Forests Restoration Act (HFRA) that stemmed from the Healthy Forest Initiative. Hazardous fuel reductions are just part of the purpose and need for the Middle Fork Weiser River project. A primary goal of this project is to maintain and increase long-lived early seral species across the landscape, including ponderosa pine, western larch, and Douglas-fir. Increasing the abundance of these species will contribute increased resiliency to disturbances such as fire, insects, and disease.
3.45	**Attachment 3 - Fuels reduction Opposing View #45 -** "Commercial logging and logging roads open the forest canopy, which can have two effects. First, it allows direct sunlight to reach the forest floor, leading to increased evaporation and drier forests.[5] As a consequence, ground fuels (grass, leaves, needles, twigs, etc.) dry out more quickly and become susceptible to fire. Second, an open canopy allows more sunlight to reach the understory trees, increasing their growth.[6] This can lead to weaker, more densely-packed forests." (pgs. 19-20) "Congress and the Forest Service continue to rely on the commercial logging program to do something it will never accomplish – reduce fire risk. The commercial logging program is designed to provide trees to private timber companies, not to reduce the risk of fire." (pg. 20) *Taxpayers for Common Sense*. "From the Ashes: **Reducing the Harmful Effects and Rising Costs of Western Wildfires**" Washington DC , Dec. 2000 http://www.ourforests.org/fact/ashes.pdf	The Forest Service could not locate the cited reference; therefore the Agency's response will be to the quotations provided. The quotations are unsupported opinions.
3.46	**Attachment 3 - Fuels reduction Opposing View #46 -** "Indiscriminate logging is not a viable solution to reducing wildfire	The cited article is opinion commentary written in the aftermath of the

#	Citation	Forest Service Response
	risk. Logging can actually increase fire danger by leaving flammable debris on the forest floor. Loss of tree canopy lets the sun in, encouraging the growth of brush, increases wind speed and air temperature, and decreases the humidity in the forest, making fire conditions even worse." Thomas, Craig. **"Living with risk: Homeowners face the responsibility and challenge of developing defenses against wildfires**." *Sacramento Bee* newspaper, July 1, 2007. http://www.sierraforestlegacy.org/NR_InTheNews/SFLIP_2007-07-01_SacramentoBee.php	2007 Angora fire that destroyed numerous homes near Lake Tahoe. The author suggests that a good fuels management plan focuses on reducing the fuels that ignite and spread wildfire while keeping the large, older trees that are resistant to fire. He cautions against a one-size-fits-all fuels reduction prescription. The definition of "indiscriminate" is haphazard; random; confused; not properly restrained. There is nothing indiscriminate about the vegetation proposals in the Middle Fork Weiser River project. Site-specific assessments were completed and will be further field-varified to determine appropriate treatments to achieve desired conditions.
3.47	**Attachment 3 - Fuels reduction Opposing View #47 -** "Timber harvest, through its effects on forest structure, local microclimate, and fuels accumulation, has increased fire severity more than any other recent human activity."(pg.62) University of California; SNEP Science Team and Special Consultants 1996 "***Sierra Nevada Ecosystem Project*: Final Report to Congress**" Volume 1, Chapter 4 – Fire and Fuels. http://ceres.ca.gov/snep/pubs/web/PDF/v1_ch04.pdf	The quote provided by the commenter is from the 1996 "Sierra Nevada Ecosystem Project: Final Report to Congress" Chapter 4 (Fire and Fuels) in a list of "Critical Findings". The comment was made by the authors specifically in context of the Sierra Nevada Mountain Range. They discuss the finding in the body of the chapter on page 64, describing the historic timber harvests: "Typically, loggers harvested fire-resistant species and large trees, and these were replaced by greater numbers of much more fire-susceptible smaller trees. This pattern of biomass removal contrasted markedly with that of presettlement surface fires, which tended to kill (and later consume) small trees and leave many large trees to survive. Large quantities of debris left after logging led to severe fires, establishing vegetation patterns still evident today." The historic logging described above and its effects bear little relationship to the Middle Fork Weiser River project harvest treatments.
3.48	**Attachment 3 - Fuels reduction Opposing View #48 -** "Why is the natural fire regime in most Rocky Mountain ponderosa pine–Douglas fir forests variable in severity? Extended droughts and high winds can lead to exceptional fire spread across a broad spectrum of fuel loads and forest structures. For example, almost 25,000 ha of ponderosa pine– Douglas fir forest burned on a single day (9 June 2002), driven by strong winds (Finney et al., 2003). Yet, brief episodes when the winds declined and fuel moisture	The provided quotation is from the 2006 publication, "Fire, Fuels and Restoration of Ponderosa pine and Douglas-fir Forests in the Rocky Mountains, USA" written by William Baker, Thomas Veblen, and Rosemary Sherriff. This article was included in the Bald Angel EA cited above. The authors suggest that fires in ponderosa pine-Douglas-fir forests in the Rocky Mountains historically varied in severity and that fire exclusion has not clearly and uniformly increased fuels or shifted fire types from low to high severity. The Middler Fork Weiser River

#	Citation	Forest Service Response
	rose, led to low-severity fire in the same landscape (Finney et al., 2003), suggesting that extreme weather, not fuels, was the chief cause of high-severity fire under those conditions. Even during summer, ponderosa pine–Douglas fir landscapes in the Rocky Mountains are subject to rapid increases in wind speed and changes in direction from jet streams or cold fronts (Baker, 2003)." (pg. 5) USDA Forest Service BALD ANGEL VEGETATION MANAGEMENT PROJECT ENVIRONMENTAL ASSESSMENT. La Grande Ranger District, Wallowa-Whitman National Forest December 2006 https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/6608/Wallowa_Whitman_Bald_Angel_Vegetation_Management_EA.pdf?sequence=1	FEIS acknowledges that, historically, the warm dry forest types within the project area burned at varied severities with some areas of underburning and other areas resulting in moderate to high tree mortality. In response to the provided quotation above, see responses to Opposing Views #5 and 43 above.
3.49	**Attachment 3 - Fuels reduction Opposing View #49 -** "Ironically, this very type of logging, experts inform us, is likely to increase, not decrease, the frequency and severity of wildland fires. In the Forest Service's own National Fire Plan, agency scientists warned against the use of commercial logging to address fire management. The report found that 'the removal of large, merchantable trees from forests does not reduce fire risk and may, in fact, increase such risk.' " Voss, René "**Getting Burned by Logging**," July 2002 *The Baltimore Chronicle* http://www.baltimorechronicle.com/firelies_jul02.shtml	This article was written in support of the National Forest Protection and Restoration Act, which would eliminate commercial logging on Federal public lands. This bill did not pass into law. No treatments are proposed in allocated old growth (Section 3.1.3.1.1). As stated in the DEIS (Section 2.5.2.2.1), "Harvest of some large-diameter trees may occur, however the goal of the treatment is to retain the largest, most resilient trees over the long term. When possible, reserve trees would be selected in locations that would facilitate survival during post-harvest prescribed burning treatments."

#	Citation	Forest Service Response
3.50	**Attachment 3 - Fuels reduction Opposing View #50 -** "The federal assistance could include funding to help state and local governments mitigate the beetle infestations, the presence of which increases the risk of forest wildfires that endanger surrounding communities and infrastructure, said supporters of the bill." "Kulakowski, a former research scientist at the University of Colorado at Boulder and current professor at Clark University in Massachusetts, discounted this notion during his testimony. He said climate, not insects, plays the most important role in forest fires, as wildfires are more likely to occur during droughts." Walsh, Jeremy "**Scientist: Money to fight beetles as fire mitigation not productive**" Durango Herald, April 23, 2010 http://durangoherald.com/sections/News/2010/04/23/Scientist_Money_to_fight_beetles_as_fire_mitigation_not_productive/	The Forest Service could not access this article. Therefore, the response is to the quotation provided. The quotation does not appear applicable to the Middle Fork Weiser River project because there is no proposal to control beetle infestations in order to reduce wildfire risk.
3.51	**Attachment 3 - Fuels reduction Opposing View #51 -** "New research published this week in the journal *Science* says that global warming may be causing more intense wildfires in the western United States. The researchers found that increases in large wildfire activity in the western United States over the past 25 years is 'strongly associated with increased spring and summer temperatures and an earlier spring snowmelt.' " Westerling, Anthony Ph.D., "**Does Global Warming Increase Forest Fires?**" NPR, *Talk of the Nation*, July 7, 2006 http://www.npr.org/templates/story/story.php?storyId=5541423	See the response to Opposing View #30 above.
3.52	**Attachment 3 - Fuels reduction Opposing View #52 -** "Indeed, climatic conditions drive all big fires — not fuels. All substantial fires occur only if there is extended drought, low humidity, high temperatures and, most importantly, high winds. Wind, in particular, is critical. Wind increases fire spread exponentially. When conditions are "ripe" for a large blaze, fires will burn through	The cited article is unsupported opinion commentary. See responses to Opposing Views #1, 3, 4, 5, and 8 above.

#	Citation	Forest Service Response
	all kinds of fuel loads. By contrast if the forest is wet like Oregon's coastal forests, you can have all the fuel in the world, and it won't burn. For this reason, most fires go out without burning more than a few acres. By contrast, when you have drought, low humidity, high temperatures and wind, a few blazes will grow into huge fires. For this reason, approximately 1 percent of all fires are responsible for about 95 to 99 percent of the acreage burned." Wuerthner, George "**The Climate Factor - Forest thinning won't deter the coming large fires**" *Eugene Weekly*, December 6, 2007 http://www.eugeneweekly.com/2007/12/06/views3.html	
3.53	**Attachment 3 - Fuels reduction Opposing View #53 -** "Another surprising finding is that mechanical fuels treatment, commonly known as logging and thinning, typically has little effect on the spread of wildfires. In fact, in some cases, it can increase wildfires' spread and severity by increasing the fine fuels on the ground (slash) and by opening the forest to greater wind and solar penetration, drying fuels faster than in unlogged forests." Wuerthner, George. "**Logging, thinning would not curtail wildfires**" The Eugene *Register-Guard*, December 26, 2008 http://wuerthner.blogspot.com/2008/12/logging-thinning-would-not-curtail.html	Written in response to another guest viewpoint printed in an Oregon newspaper. The Middle Fork Weiser River project proposed vegetation treatments should retain large, fire-resistant, legacy trees. Activity generated slash will be treated by prescribed burning, mastication, or biomass.
3.54	**Attachment 3 - Fuels reduction Opposing View #54 -** "For example, the Forest Service justifies the Elliston Face timber sale on the basis of reducing what they call "hazardous" fuels (which as an ecologist I call woody biomass). To quote the FS, "This project would reduce wildland fire risk and help protect lives, communities, and ecosystems from the potential consequences of a high-intensity wildland fire within treatment areas." "	The cited article is unsupported opinion commentary criticizing a fuels reduction project on the Helena National Forest, which is irrelevant to the Middle Fork Weiser River project (refer to the purpose and need discussion in the Middle Fork Weiser River FEIS, Section 1.7).

#	Citation	Forest Service Response
	"The Forest Service makes these assertions even though the statement is full of falsehoods, misleading and/or unproven assumptions." "even the Forest Service's own analysis concludes that logging of the Elliston Face will have some adverse impacts on soils, watersheds, wildlife, scenery and recreation. So we need to ask whether the potential effects of a fire that may not occur for a century or more is worth the negative impacts created by the logging process now?" "The Forest Service's own analysis has six indicator species—including pileated woodpecker, hairy woodpecker, martin, northern goshawk. These species depend on dead snags and down wood that pine beetles and wildfire create. But the FS treats beetles and wildfire as unwelcome events." "the FS exploits the fears of misinformed citizens. One can only conclude the agency is still the handmaiden to the timber industry rather than a public servant working on behalf of all citizens of the country." Wuerthner, George **"Forest Service misses education opportunity"** Published in *NewWest*, June 2010 http://www.newwest.net/topic/article/elliston_face_is_yet_another_example_of_forest_service_malfeasance/C564/L564/	
3.55	**Attachment 3 - Fuels reduction Opposing View #55 -** "Ultimately, fuels do not control fires. If the climate/weather isn't conducive for fire spread, it doesn't much matter how much dead wood you have piled up, you won't get a large fire. As an extreme example, think of all the dead wood lying around on the ground in old-growth West Coast rainforests — tons of fuel, but few fires — because it's too wet to burn. Large blazes are driven by a combination of extreme drought, low humidity, high temperatures and, most importantly, wind. These	The cited article is unsupported opinion commentary stating that bark beetle-induced tree mortality creates new ecological opportunities, increases biodiversity, improves ecosystem health, and reduces fire risk. This article is irrelevant to the Middle Fork Weiser River project because salvage of dead and dying trees is not proposed. In response to the quotation provided, please also see responses to Opposing View #s 5 and 43 above.

#	Citation	Forest Service Response
	conditions do not occur in the same place at the same time very frequently — which is why there are often decades to centuries between major blazes and most fires go out without burning more than a few acres." Wuerthner, George **"Pine Beetle Fears Misplaced"** *Helena Independent Record*, March 25, 2010 http://helenair.com/news/opinion/article_f3d671f0-37c9-11df-921d-001cc4c002e0.html	
3.56	**Attachment 3 - Fuels reduction Opposing View #56 -** "In the last analysis, the politics of forest thinning promotes more logging. The timber industry has successfully sold the idea that fuel reductions work and it has great influence with politicians who buy into to its assurance that logging reduces large fires." "So is there any place for forest thinning/fuel reductions? There is. But it should be limited to the areas immediately surrounding homes and communities. Since one can't predict where a fire will start and burn, thinning forest willy-nilly is a waste of effort. Not only are most thinning projects done improperly, most are done for the wrong reasons and lose taxpayer money to boot." "Thinning trees/shrubs near homes, combined with a reduction in home flammability by installation of metal roofs, removal of flammable materials adjacent to homes, and other measures can virtually guarantee a home will survive even a severe high intensity forest fire." Wuerthner, George, **"WHY THINNING FORESTS IS POOR WILDFIRE STRATEGY"** Published in the *Wildlife News*, January 27, 2014 http://www.thewildlifenews.com/2014/01/27/why-thinning-forests-is-poor-wildfire-strategy/	Conjecture/opinion. This is an opinion piece in which the author describes why he believes fuels reduction projects do not prevent wildfires. The author describes how fuels reduction projects can be effective with a combination of mechanical treatments and prescribed fire but do not halt large fires Activities proposed in the Middle Fork Weiser River project are not intended to replace the effects of fire, but rather to alter fire/fuels behavior and profiles. Using fire and mechanical methods as vegetation management tools is in compliance with the PNF Forest Plan. The effects and limitations of this management approach were considered in the project analysis and design. The Middle Fork Weiser River project proposed vegetation treatments should retain large, fire-resistant, legacy trees. Activity generated slash will be treated by prescribed burning, mastication, or biomass.
3.57	**Attachment 3 - Fuels reduction Opposing View #57 -** "If anything, heavy logging from earlier years may have contributed more to the conditions that have made Western forests ripe for big	Conjecture/opinion. The cited article has no substantive information for the Middle Fork Weiser River project.

#	Citation	Forest Service Response
	fires, because more flammable small trees and heavy brush are often left in the forest after the larger stands of timber have been taken out, said the report, by the Congressional Research Service, which analyzes policy for Congress." Egan, Timothy, "**Fires Not Caused by Reduced Logging, Congressional Report Finds**" **Published in the *New York Times*: September 1, 2000** http://www.nytimes.com/2000/09/01/us/fires-not-caused-by-reduced-logging-congressional-report-finds.html	
3.58	**Attachment 3 - Fuels reduction Opposing View #58 -** "The fact is, commercial logging doesn't prevent catastrophic fires; it causes them. In the latter part of the 19th century, this was common knowledge. Relentless clearing of forests in the Great Lakes region left huge areas largely devoid of the cooling shade of trees, replacing moist natural forest microclimates with the hotter, drier conditions characterized by stump fields. Flammable logging "slash debris" covered the landscape." "Not long ago, Congress commissioned a study of California's forests that came to be known as the Sierra Nevada Ecosystem Project (SNEP) report. Produced jointly with the US Forest Service in 1996, the report confirmed what people have known for over a century: "timber harvest, through its effects on forest structure, local microclimate, and fuel accumulation, has increased fire severity more than any other recent human activity" " Hanson, Chad, "**The Big Lie: Logging and Forest Fires**" Published in the *Earth Island Journal*, Spring 2000 http://yeoldeconsciousnessshoppe.com/art6.html	This is an opinion piece in which the author describes why he believes commercial logging does not prevent wildfires. Activities proposed in the Middle Fork Weiser River project are not intended to replace the effects of fire, but rather to alter fire/fuels behavior and profiles. Using fire and mechanical methods as vegetation management tools is in compliance with the PNF Forest Plan. The effects and limitations of this management approach were considered in the project analysis and design.
3.59	**Attachment 3 - Fuels reduction Opposing View #59 -** "Researchers from the Australian National University (ANU) and Melbourne University examined hundreds of thousands of trees burnt in the 2009 bushfires in Victoria, which claimed the lives of 173 people on a day of extreme temperatures and high winds.	Conjecture/opinion. The cited article has no substantive information for the Middle Fork Weiser River project.

#	Citation	Forest Service Response
	They found that the increased fire risk began about seven years after an area had been logged and lasted for another 50 years. Professor David Lindenmayer, from the ANU, said the results showed the fires around Kinglake and Marysville were about 25 per cent more severe due to the clear-felling of forest in the area." "**Logging can 'greatly increase' fire severity for 50 years, researchers say**" Broadcast on ABC News Australia, August 3, 2014 http://www.abc.net.au/news/2014-08-04/logging-greatly-increases-fire-risk-black-saturday-study/5646220	
3.60	**Attachment 3 - Fuels reduction Opposing View #60 -** "The scientists say the study showed conclusively that logging in the decades prior to Black Saturday made the deadly blaze much more extreme. They also warn that increased fire danger in forests lasts for up to 70 years after an area is logged, with the risk peaking between 10 and 50 years." Campbell, James, "**Study finds logging increased intensity of Black Saturday fires**" Published in the *Herald Sun,* August 03, 2014 http://www.heraldsun.com.au/news/victoria/study-finds-logging-increased-intensity-of-black-saturday-fires/story-fni0fit3-1227012027799	Conjecture/opinion. The cited article has no substantive information for the Middle Fork Weiser River project.
3.61	**Attachment 3 - Fuels reduction Opposing View #61 -** " "More highly intense fire is not occurring now than historically in dry forests," said William Baker, who teaches fire ecology and landscape ecology in Laramie, Wyo., where he's been doing research more than 20 years. "These forests were much more diverse and experienced a much wider mixture of fire than we thought in the past, including substantial amounts of high-severity fire." "	News article giving a brief summary of a study of field notes taken teams of government land surveyors in the mid-1800s attempting to map the nation's wild lands. The transects covered 250 miles in three states.

#	Citation	Forest Service Response
	"If he's right, he and others say it means fuel-reduction programs aimed at removing trees and shrubs in the name of easing fire threats are creating artificial conditions that likely make dry forests less resilient." " "It means we need to rethink our management of Western dry forests," said Baker, a member of a U.S. Fish and Wildlife Service working group that is developing plans to help bolster northern spotted owl populations in dry forests." "Jennifer Marlon, a Yale University paleoecologist, said a study she recently led on the impact of climate change on forests over thousands of years appeared to be largely consistent "with Baker's idea that there were large, severe fires even in dry forests historically." " " "The general trend from high fire in the 1800s to very low fire in the 1900s is strong and clear from three independent datasets," she said. "Open park-like conditions may have indeed occurred after the 'peak' in burning during the mid-1800s." " "The new studies provide the first "real, direct data'" showing that more forests burned historically, creating more post-fire forest habitat, said Chad Hanson, a forest ecologist and director of the John Muir Project who is helping lead the listing effort and suing the Forest Service to block post-fire logging in woodpecker habitat near Lake Tahoe." "Now, he believes thinning and post-fire salvage operations should be re-examined and emphasis placed on maintaining high-density stands in certain circumstances that would not threaten people or homes." "We shouldn't be managing just for low-density forests," he said. "We should not be unhappy with — or perhaps even manage for — higher severity fires in the forests." Sonner, Scott AP, **Study challenges views about Western forest fires** Published in the *Daily World,* July 23, 2012 Link: http://www.thedailyworld.com/sections/newswire/northwest/study-challenges-views-about-western-forest-fires.html	

#	Citation	Forest Service Response
3.62	**Attachment 3 - Fuels reduction Opposing View #62-** "In the case of the Rim Fire, our research found that protected forest areas with no history of logging burned least intensely. There was a similar pattern in other large fires in recent years. Logging removes the mature, thick-barked, fire-resistant trees. The small trees planted in their place and the debris left behind by loggers act as kindling; in effect, the logged areas become combustible tree plantations that are poor wildlife habitat. **More Logging Won't Stop Wildfires** By Drs. CHAD T. HANSON and DOMINICK A. DELLASALA *The New York Times*, Jul 28, 2015 http://www.oregonwild.org/about/press/more-logging-won%E2%80%99t-stop-wildfires	Conjecture/opinion. The piece on why the author's oppose pending legislation to allow more post-fire salvage logging.
3.62	**Attachment 4 - Road Construction Opposing View #1** - "Fragmentation has been considered as one of the most major factors that lead to the decline of many wildlife species (Brittingham and Temple 1983, Yahner 1988, Winslow et al. 2000) because fragmentation tends to decrease population productivity (Robinson et al. 1995). Therefore, Meffe states that "fragmentation has become a major subject of research and debate in conservation biology" (Meffe et al. 1997, p. 272). Forest fragmentation usually occurs when large and continuousforests are divided into smaller patches as a result of road establishment, clearing for agriculture, and human development (Robinson et al. 1995, Meffe et al. 1997)." (Pg. 1) "Generally, habitat fragmentation is an ecological process in which a large patch of habitat is divided into smaller patches of habitats. Usually, this process is caused by human activities (roads, agriculture, and logging). It also reduces the value of the landscape as habitat for many species (plants and animals). Fragmentation alters natural habitat in many ways, including	The Middle Fork Weiser River project area has been managed in the past. A list of past activities is located in FEIS Appendix 3. All action alternatives would reduce road density across all subwatersheds in the project area, which is expected to improve conditions for wildlife (see FEIS section 3.4).

#	Citation	Forest Service Response
	reduction of patches' sizes, increment of distances between similar patches, and increment of edges and predation (Brittingham and Temple 1983, Robinson et al. 1995)." (Pp. 2 and 3) Al-jabber, Jabber M. 2003 "Habitat Fragmentation: Effects and Implications" http://faculty.ksu.edu.sa/a/Documents/Habitat%20Fragmentation%20 Effects%20and%20Implication.pdf	

#	Citation	Forest Service Response
3.63	**Attachment 4 - Road Construction Opposing View #2** - "Debris slides over a 20- year period were inventoried on 137,500 acres of forested land in the Klamath Mountains of southwest Oregon. Frequency during the study period was about one slide every 4.3 years on each 1,000 acres-an erosion rate of about 1/2 yd3 per acre per year. Erosion rates on roads and landings were 100 times those on undisturbed areas, while erosion on harvested areas was seven times that of undisturbed areas. Three-quarters of the slides were found on slopes steeper than 70 percent and half were on the lower third of slopes." "Soil erosion rates due to debris slides were many times higher on forests with roads, landings, and logging activity than on undisturbed forests." Amaranthus, Mike P. Ph.D., Raymond M. Rice Ph.D., N. R. Barr and R. R. Ziemer Ph.D. "Logging and forest roads related to increased	The findings presented in Road Construction Opposing View #2 were developed from analysis of aerial photographs taken between 1956 and 1976. The study area was the coastal mountains of southwest Oregon, with annual precipitation ranging from over 50 to 150 inches. By contrast, the Middle Fork Weiser River project area (Council, Idaho) receives an average of approximately 24 inches of annual precipitation. The concluding sentence from the referenced abstract reads as follows: “Results serve as a guide to appraising slide risk associated with planned timber harvests or road construction on forested slopes.” FEIS section 3.5 includes discussion on the current science and guidance applied to the analysis of management activities that may influence slope stability. Section 3.5 discloses the potential direct, indirect, and cumulative effects of the timber harvest and road activities on slope stability under the different alternatives.

#	Citation	Forest Service Response
	debris slides in southwestern Oregon." Journal of Forestry Vol. 83, No. 4. 1985. http://www.humboldt.edu/~rrz7001/pubs/Ziemer85.PDF	
3.64	**Attachment 4 - Road Construction Opposing View #3** - " 'Roads may have unavoidable effects on streams, no matter how well they are located, designed or maintained. The sediment contribution to streams from roads is often much greater than that from all other land management activities combined, including log skidding and yarding.' (Gibbons and Salo 1973). Research by Megahan and Kidd in 1972 found that roads built in areas with highly erosive soils can contribute up to 220 times as much sediment to streams as intact forests." "Applying Ecological Principles to Management of the U.S. National Forests" Issues in Ecology Number 6 Spring 2000 http://www.watertalk.org/wawa/ecosci.html	Road Construction Opposing View #3 is consistent with the purpose and need, science used, and treatments proposed in the Middle Fork Weiser River project. The selected alternative includes 76.1 miles of road decommissioning, including 16.0 miles system roads and 60.1 miles of unauthorized routes, In addition, 19.3 miles of system roads will be put in long term closure (FEIS Table 2-17). The primary purpose of these road treatments is watershed restoration. All temporary roads built or used in association with project activities would be completely decommissioned after project implementation. Effects of roads, including use of roads for haul routes, temporary road construction, road –to-trail conversion, road re-routes, and road decommissioning are analyzed in FEIS Chapter 3.
3.65	**Attachment 4 - Road Construction Opposing View #4** - "Plot-level studies have demonstrated the ability of forest roads to intercept and route both subsurface and surface overland flow more efficiently to the stream network. Significant amount of subsurface throughflow can be intercepted by the road, as a function of the road cut depth and the current saturation deficit, and then redirected, concentrating the flow in particular areas below the road. Road drainage concentration	Change in drainage network, change in peak/base flows, and disturbance regime (including the potential for landslide occurrence) due to roads have been analyzed, and the discussion is included in FEIS section 3.5 (Watershed Resources). See also response to Road Construction Opposing View #3.

#	Citation	Forest Service Response
	increases the effective length of the channel network and strongly influences the distribution of erosional processes. The concept of wetness index has been used in the study as a surrogate for subsurface throughflow, and the effect of forest roads on subsurface throghflow rerouting has been assessed by evaluating the changes in terms of draining upslope areas. A threshold model for shallow slope instability has been used to analyse erosional impacts of drainage modifications. In the model, the occurrence of shallow landsliding is evaluated in terms of drainage areas, ground slope and soil properties (i.e., hydraulic conductivity, bulk density, and friction angle). The model has been used to generate hypotheses about the broader geomorphic effect of roads. Modelling results have been compared with available field data collected in north-eastern Italy." Borga, M., F. Tonelli, G. Dalla Fontana and F. Cazorzi "Evaluating the Effects of Forest Roads on Shallow Landsliding" Geophysical Research Abstracts, Vol. 5, 13312, 2003 http://www.cosis.net/abstracts/EAE03/13312/EAE03-J-13312.pdf	
3.66	**Attachment 4 - Road Construction Opposing View #5** - "A large scale land use experiment has taken place over the last 40 years in the mountainous areas of the northwestern U.S. through timber harvesting. This land use change effects the hydrology of an area through two mechanisms: •Clear-cut logging which causes changes in the dynamics of Rain-On- Snow (ROS) events due to changes in the accumulation and ablation of snow caused by vegetation effects on snow interception and melt; and •Construction and maintenance of forest roads which channel intercepted subsurface flow and infiltration	Effects of proposed actions on peak flow and channel conditions are analyzed in the FEIS using Equivalent Clearcut Area as an index of disturbance. See FEIS section 3.5.

	excess runoff to the stream network more quickly." Bowling, L.C., D. P. Lettenmaier, M. S. Wigmosta and W. A. Perkins	

#	Citation	Forest Service Response
	"Predicting the Effects of Forest Roads on Streamflow using a Distributed Hydrological Model" from a poster presented at the fall meeting of the American Geophysica Union, San Francisco, CA, December 1996. http://www.ce.washington.edu/~lxb/poster.html	
3.67	**Attachment 4 - Road Construction Opposing View #6** - "Many of the conclusions and assumptions contained in the Roads Report are based on analysis of the positive contributions of roads. Negative socio- economic effects of roads have been, in large part, glossed over. The general view expressed in the Roads Report is that overall, roads make a positive socio-economic contribution." "The Socio-Economic Effects section has been constructed to overwhelmingly support the contention that the benefits of roads outweigh the costs. In order to arrive at such a conclusion, however, certain important economic costs and concepts have been omitted." "A serious problem with the Roads Report is its lack of discussion concerning the economic costs arising from the negative ecological effects of roads. Despite overwhelming scientific data linking roads and sedimentation (Bennett 1991; Grayson et al. 1993; Lyon 1984; Megahan 1980; McCashion and Rice 1983; Wade 1998; Williams 1998), the socio-economic costs of mitigating the effects of this sedimentation receive no mention in the Roads Report. Such costs are central to and should be included in any socio-economic assessment of forest roads."	The Middle Fork Weiser River project analysis does not make the assumption that roads make a positive socio-economic contribution. One of the primary goals of the project is to decide what the Minimum Road System (MRS) needed for future forest management is. The economics analysis in FEIS Chapter 3, section 3.12 analyzes road work, including decommissioning, under each alternative. The Transportation analysis in Chapter 3 discusses the MRS and associated costs by alternative (see Table T-6). Effects of roads on sedimentation are analyzed section 3.3 (Watershed Resources).
3.68	**Attachment 4 - Road Construction Opposing View #7** - "The present road system constitutes a legacy of current and potential sources of damage to aquatic and riparian habitats, mostly through sedimentation, and to terrestrial habitats through fragmentation and increased access" (Amaranthus et all 1985)."	The article cited is an opinion paper offering review and comment on "Forest Service Roads: A Synthesis of Scientific Information," 2nd Draft, USDA Forest Service, December 1998. The final document, "Forest Roads: A Synthesis of Scientific Information" (General Technical Report PWN-GTR-509), was published in May 2001 by the Pacific Northwest Research Station, Portland, Oregon. The

#	Citation	Forest Service Response
	"The failure of the Report to properly address mitigation costs associated with the ecological effects is a serious problem that needs to be addressed in future drafts. Similarly, passive-use values need to be taken seriously and considered throughout the Roads Report. In order to rectify these problems, most of the Socio-Economic Effects subsections will have to be reworked. Failing to do so, the Roads Report will paint an incomplete picture of the costs and benefits associated with the Forest Service's road program." Brister, Daniel. "A Review and Comment on: Forest Service Roads: A Synthesis of Scientific Information, 2nd Draft, USDA Forest Service." December 1998. http://www.wildlandscpr.org/forest-service-roads-synthesis-scientific- information-socio-economic-impacts	quotes displayed by Mr. Artley are taken from the paper written by Daniel Brister, University of Montana, Environmental Studies Program, in December 1998 to assist the Forest Service in subsequent drafts. The article written by Mr. Brister suggests the Forest Service include, in the final document, an assessment of socioeconomic impacts of forest system roads, including impacts to aquatic, riparian and wildlife resources and associated habitats from road management, road-related fragmentation, and road access. The economics analysis in FEIS Chapter 3, section 3.12 analyzes road work, including decommissioning, under each alternative. Water quality and the disclosure of effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.5 (Watershed Resources). The effects on fisheries from sedimentation caused by road management activities are discussed in FEIS section 3.6. For additional information concerning road management effects on wildlife and wildlife habitat, please refer to the FEIS Chapter 3 Wildlife section 3.4.
3.69	**Attachment 4 - Road Construction Opposing View #8** - "Sediment input to freshwater is due to either the slower, large-scale process of soil erosion, or to rapid, localized “mass movements,” such as landslides. Forest practices can increase the rate at which both processes occur. Most sediment from forestry arises from landslides from roads and clearcuts on steep slopes, stream bank collapse after riparian harvesting, and soil erosion from logging roads and harvested areas.	Project Design Features (Table 2-31) and BMPs are utilized to reduce sediment delivery potential to waterbodies. RCAs of 240 feet for perennial and 120 feet for intermittent streams provide a buffer for any disturbance from logging activities. In areas where RCA treatments are proposed, Additional PDFs are proposed to limit slope and require minimum ground cover amounts.

#	Citation	Forest Service Response
	Roads, particularly those that are active for long periods of time, are likely the largest contributor of forestry-induced sediment (Furniss et al. 1991)." "Sediment can increase even when roads comprise just 3% of a basin (Cederholm et al. 1981)." "More than half the species present in the study area will likely be negatively impacted by sedimentation from logging roads." "In areas made highly turbid (cloudy) from sedimentation, the foraging ability of adults and juveniles may be inhibited through decreased algal production and subsequent declines in insect abundance, or, for visual-feeding taxa dependent on good light, through their inability to find and capture food. Highly silted water may damage gill tissue and cause mortality or physiological stress of adults and juveniles." Bunnell, Fred L. Ph.D., Kelly A. Squires and Isabelle Houde. 2004 "Evaluating effects of large-scale salvage logging for mountain pine beetle on terrestrial and aquatic vertebrates." Mountain Pine Beetle Initiative Working Paper 1. Canadian Forest Service. http://warehouse.pfc.forestry.ca/pfc/25154.pdf	Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.5 (Watershed Resources).
3.70	**Attachment 4 - Road Construction Opposing View #9** - "The road construction and right-of-way logging were immediately detrimental to most aquatic invertebrates in South Fork Caspar Creek" "Salmonid populations decreased immediately after the road construction." "Sustained logging and associated road construction over a period of many years do not afford either the stream or the 'fish population a chance to recover."	The effects on fisheries from sedimentation caused by road management activities are discussed in FEIS section 3.6.

#	Citation	Forest Service Response
	Burns, James W., "Some Effects of Logging and Associated Road Construction on Northern California Streams." Transactions of the American Fisheries Society, Volume 1, Number 1, January 1972. http://www.fs.fed.us/psw/publications/4351/Burns72.pdf	
3.71	**Attachment 4 - Road Construction Opposing View #11** - "Forest roads apparently can serve as a partial filter to the movements of some amphibian species" deMaynadier, Phillip G. and Malcolm L. Hunter, Jr. "Road Effects on Amphibian Movements in a Forested Landscape" From Natural Areas Journal (2000) Volume: 20, Issue: 1, Pages: 56-65 http://www.mendeley.com/research/road-effects-on-amphibian-movements-in-a-forested-landscape/	Effects of proposed activities on Columbia spotted frog are analyzed in the Wildlife Specialist Report (project record).
3.72	**Attachment 4 - Road Construction Opposing View #12** - "Roads often cause serious ecological impacts. There are few more irreparable marks we can leave on the land than to build a road." Dombeck, Mike Ph.D., US Forest Service Chief, 1997-2001 Remarks made to Forest Service employees and retirees at the University of Montana. February 1998. https://www.uwsp.edu/cnr/gem/Dombeck/MDSpeeches/CD%20COPY/Chief%20Mike%20Dombeck%27s%20Remarks%20to%20Forest%20Service%20Employees%20and%20.htm	"Roads often cause serious ecological impacts. There are few more irreparable marks we can leave on the land than to build a road." This is not an accurate quote from Chief Dombeck's speech. His actual statement, taken from the source provided, reads as follows: *"The benefits of forest roads are many. But they also often cause serious ecological impacts. There are few more irreparable marks we can leave on the land than to build a road."* The effects of proposed maintenance of existing roads, the effects of construction and improvements of other roads, and the reasons and benefits of decommissioning roads no longer needed to support management objectives within this area are disclosed in each resource section in Chapter 3 of the FEIS.
3.73	**Attachment 4 - Road Construction Opposing View #13** - "Few marks on the land are more lasting than roads."	This quote is an excerpt from a March 3, 2002, Federal Register Notice posted by the Forest Service. The Forest Service concluded that it needed to review its forest road system policy, 1

#	Citation	Forest Service Response
	"The negative effects on the landscape of constructing new roads, deferring maintenance, and decommissioning old roads are well documented. Unwanted or non-native plant species can be transported on vehicles and clothing by users of roads, ultimately displacing native species. Roads may fragment and degrade habitat for wildlife species and eliminate travel corridors of other species. Poorly designed or maintained roads promote erosion and landslides, degrading riparian and wetland habitat through sedimentation and changes in streamflow and water temperature, with associated reductions in fish habitat and productivity. Also, roads allow people to travel into previously difficult or impossible to access areas, resulting in indirect impacts such as ground and habitat disturbance, increased pressure on wildlife species, increased litter, sanitation needs and vandalism, and increased frequency of human-caused fires." EPA entry into the Federal Register: March 3, 2000 (Volume 65, Number 43) Page 11675, "National Forest System Road Management." http://www.epa.gov/fedrgstr/EPA-GENERAL/2000/March/Day-03/g5002.htm	of 4 emphasis items in the Agency's National Resource Agenda. The Agency proposed to revise 36 CFR Part 212 to shift the emphasis from transportation development to managing environmentally sound access. The statement in its entirety reads as follows: *"Few marks on the land are more lasting than roads. Yet, forest roads are essential for forest use and often serve as the backbone of rural transportation networks.* The effects of using roads for implementation of vegetation treatments, long term road closures, and decommissioning of roads are discussed under each resource section in FEIS Chapter 3.
3.74	**Attachment 4 - Road Construction Opposing View #14** - "Fragmentation caused by roads is of special interest because the effects of roads extend tens to hundreds of yards from the roads themselves, altering habitats and water drainage patterns, disrupting wildlife movement, introducing exotic plant species, and increasing noise levels. The land development that follows roads out into rural areas usually leads to more roads, an expansion process that only ends at natural or legislated barriers." "Forest Fragmentation and Roads" Eastern Forest Environmental Threat Assessment Center U.S. Forest Service - Southern Research Station http://www.forestthreats.org/publications/su-srs-018/fragmentation	The cited document discusses the effects of roads relative to habitat fragmentation across the United States. The information provided in the document is general in nature. The paper provides neither site-specific nor species-specific information relevant to the Middle Fork Weiser River project or the management of the Payette National Forest management indicator species or designated threatened, endangered, or sensitive species. All action alternatives would reduce road density across all project area subwatersheds.

#	Citation	Forest Service Response
3.75	**Attachment 4 - Road Construction Opposing View #15** - "A huge road network with vehicles ramifies across the land, representing a surprising frontier of ecology. Species-rich roadsides are conduits for few species. Roadkills are a premier mortality source, yet except for local spots, rates rarely limit population size. Road avoidance, especially due to traffic noise, has a greater ecological impact. The still-more-important barrier effect subdivides populations, with demographic and probably genetic consequences. Road networks crossing landscapes cause local hydrologic and erosion effects, whereas stream networks and distant valleys receive major peak-flow and sediment impacts. Chemical effects mainly occur near roads. Road networks interrupt horizontal ecological flows, alter landscape spatial pattern, and therefore inhibit important interior species. Thus, road density and network structure are informative landscape ecology assays. Australia has huge road-reserve networks of native vegetation, whereas the Dutch have tunnels and overpasses perforating road barriers to enhance ecological flows. Based on road-effect zones, an estimated 15–20% of the United States is ecologically impacted by roads." Forman, Richard T. and Lauren E. Alexander "Roads and their Major Ecological Effects" Annual Review of Ecology and Systematics, Vol. 29: 207-231, November 1998 http://arjournals.annualreviews.org/doi/abs/10.1146/annurev.ecolsys.29.1.207?cookieSet=1&journalCode=ecolsys.1	The cited document discusses road impacts to species at a national and global level, including Britain and Australia. The references this document makes to roadside vegetation and roadkill issues are primarily linked to improved roads with maintained (mowed) margins, not narrow, native-surfaced forest roads such as those found in the Middle Fork Weiser River project area. The document also raises the issue of disturbance and avoidance, mainly in the context of high use, high-speed roads, which does not apply to this project. However, the issue of wildlife disturbance from roads in general does apply even to small forest roads and to this project, especially in terms of open roads and the potential impacts to elk. Finally, the document identifies roads as barriers, which can negatively influence species diversity and fragment populations. The effects of using roads for implementation of vegetation treatments, long term road closures, and decommissioning of roads are discussed under each resource section in FEIS Chapter 3.
3.76	**Attachment 4 - Road Construction Opposing View #16** - "Questions to consider: Roads dramatically alter forest ecosystems 1. Does the management prescription account for the ecological effects of the road construction and maintenance activities associated with carrying out such activities? 2. Have alternatives to road building been considered? How does the plan attempt to address the effects of roads?" (page 37)	The effects of temporary road construction and road maintenance are discussed under each resource section in FEIS Chapter 3. The Middle Fork Weiser River project does not proposes new permanent road construction, temporary roads will be decommissioned and recontoured following use. The Middle Fork Weiser River project alternatives analyze a variety of road treatments and Minimum Road Systems (MRS).

#	Citation	Forest Service Response
	Franklin, Jerry Ph.D., David Perry Ph.D., Reed Noss Ph.D., David Montgomery Ph.D. and Christopher Frissell Ph.D. 2000. "Simplified Forest Management to Achieve Watershed and Forest Health: A Critique." A National Wildlife Federation publication sponsored by the Bullitt Foundation http://www.coastrange.org/documents/forestreport.pdf	
3.77	**Attachment 4 - Road Construction Opposing View #17** - "The authors warned that cutting roads into current roadless areas could bring much more harm to wildlife, soil and fisheries than the beetle-killed trees pose to the forest." Frey, David "Logging Won't Halt Beetles, Fire, Report Says" NewWest.net, 3-03-10 http://www.newwest.net/topic/article/logging_wont_halt_beetles_fire_report_says/C41/L41/	The Middle Fork Weiser River project does not propose any road construction in an inventoried roadless area, and includes an analysis of effects to the Council Mountain and Poison Creek IRAs in the project file.
3.78	**Attachment 4 - Road Construction Opposing View #18** - "Rarely can roads be designed and built that have no negative impacts on streams. Roads modify natural drainage patterns and can increase hillslope erosion and downstream sedimentation. Sediments from road failures at stream crossings are deposited directly into stream habitats and can have both on-site and off-site effects. These include alterations of the channel pattern or morphology, increased bank erosion and changes in channel width, substrate composition, and stability of slopes adjacent to the channels." "All of these changes result in important biological consequences that can affect the entire stream ecosystem. One specific example involves anadromous salmonids, such as salmon and steelhead, that have complex life histories and require suitable stream habitat to support both juvenile and adult life stages." "A healthy fishery requires access to suitable habitat that provides	The Middle Fork Weiser River project includes 16.0 miles of system road decommissioning, 60.1 miles of unauthorized route decommissioning, and 19.3 miles of new long term road closures (FEIS Table 2-17). All action alternatives reduce the MRS and road impacts in every subwatershed. Each of the proposed action alternatives would reduce the number of road stream crossings within the project boundary by decommissioning or long term closure of roads. The selected alternative propose 2 fish passage barrier improvements to accommodate aquatic organism passage; these crossings would also allow for larger magnitude flood flows than the existing stream crossings. Effects to fish and fish habitat, including ESA listed bull trout critical habitat are analyzed in the Fisheries section of FEIS Chapter 3 and in the project biological assessment (project file).

#	Citation	Forest Service Response
	food, shelter, spawning gravel, suitable water quality, and access for upstream and downstream migration. Road-stream crossing failures have direct impacts on all of these components." Furniss, Michael J., Michael Love Ph.D. and Sam A. Flanagan "Diversion Potential at Road-Stream Crossings." USDA Forest Service. 9777 1814—SDTDC. December 1997. http://www.stream.fs.fed.us/water-road/w-r-pdf/diversionpntl.pdf	
3.79	**Attachment 4 - Road Construction Opposing View #19** - "Barry Noon, a professor of wildlife ecology at Colorado State University, noted that scientific research has consistently shown the adverse effects of roads on hydrologic processes and fish and wildlife populations. "One of the key things to recognize is the effects of the roads extend far beyond their immediate footprint," Noon said. For example, "in terms of hydrology, the roads are leading to faster runoff of water, often with great increases in sedimentation, particularly following storm events, and roads in watersheds often lead to increases in the intensity of floods." These changes degrade fish habitat because of the increased sedimentation that leads to decreases in water quality, Noon said. And roads fragment wildlife habitat and create areas that animals avoid, often as result of increased hunting, he said." Gable, Eryn "Battling beetles may not reduce fore risks – report" Land Letter, March 4, 2010 http://www.xerces.org/2010/03/04/battling-beetles-may-not-reduce-fire-risks-report/	The cited article discusses a recent report addressing the mountain pine beetle epidemic in Colorado and how best to manage forests in the context of limited funding and roadless area designations. Most of the action proposed in the Middle Fork Weiser River project will be funded by the Collaborative Forest Restoration Program. The project area does include the Council Mountain and Poison Creek roadless areas, which are analyzed in the Inventoried Roadless Area report in the project file. The effects of using roads for implementation of vegetation treatments, long term road closures, and decommissioning of roads are discussed under each resource section in FEIS Chapter 3.
3.80	**Attachment 4 - Road Construction Opposing View #20** - "Roads and skid trails have been identified as a major contributor to increased turbidity of water draining logging areas resulting in increases from 4 to 93 parts per million (Hoover, 1952). Forest roads have been found to have	The Middle Fork Weiser River project includes 16.0 miles of system road decommissioning, 60.1 miles of unauthorized route decommissioning, and 19.3 miles of new long term road closures (FEIS Table 2-17). All action alternatives reduce the MRS and road impacts in every subwatershed.

#	Citation	Forest Service Response
	erosion rates from one to three orders of magnitude greater than similar undisturbed areas (Megahan, 1974) and perhaps account for as much as 90 percent of all forest erosion (Megahan, 1972). Forest roads can also cause soil erosion and stream sedimentation, which adversely impact on the nation's water quality (Authur et al., 1998). Grace, Johnny M. III Ph.D. 2003. "Minimizing the impacts of the forest road system." In: Proceedings of the conference 34 international erosion control association; ISSN 1092-2806. [Place of publication unknown]: International Erosion Control Association: 301-310. http://www.srs.fs.usda.gov/pubs/ja/ja_grace011.pdf	
3.81	**Attachment 4 - Road Construction Opposing View #21** - "Roads have well- documented, short- and long-term effects on the environment that have become highly controversial, because of the value society now places on unroaded wildlands and because of wilderness conflicts with resource extraction." "(Road) consequences include adverse effects on hydrology and geomorphic features (such as debris slides and sedimentation), habitat fragmentation, predation, road kill, invasion by exotic species, dispersal of pathogens, degraded water quality and chemical contamination, degraded aquatic habitat, use conflicts, destructive human actions (for example, trash dumping, illegal hunting, fires), lost solitude, depressed local economies, loss of soil productivity, and decline in biodiversity." Gucinski, Hermann Ph.D., Michael J. Furniss, Robert R. Ziemer Ph.D. and Martha H. Brookes, Editors. 2001. "Forest Roads: A Synthesis of Scientific Information." USDA Forest Service, General Technical Report PNW-GTR-509. http://www.fs.fed.us/pnw/pubs/gtr509.pdf	PNW-GTR-509 describes the effects roads have on ecosystems. It is a companion paper to Roads Analysis: Informing Decisions About Managing the National Forest Transportation System (USDA FS 1999). PNW-GTR-509 details the known issues related to road impacts on physical and biological resources, road impacts at various scales, and the socioeconomics of roads. The report then describes the known science surrounding these issues. The focus of the report is to help the reader understand how roads function in the landscape. Specifically, the GTR addresses habitat fragmentation, habitat loss, displacement or avoidance, roadkill, reduction in species diversity, negative edge effects, fragmentation of interior habitats, vectors for invasive species, poaching, reduced densities of snags and logs, collisions, and movement barriers. The portions of this document that address terrestrial issues focus on findings from Wisdom et al. (2000). The Middle Fork Weiser River proposes to reduce the miles of system and non-system roads, and establish a reduced Minimum Road System under each action alternative. The effects of using roads for haul routes, road maintenance, construction of temporary roads, and decommissioning of roads are discussed under each resource section in FEIS Chapter 3.

#	Citation	Forest Service Response
3.82	**Attachment 4 - Road Construction Opposing View #22** - "Fires in the roaded areas are more intense, due to drier conditions, wind zones on the foothill/valley interface, high surface-fuel loading, and dense stands." Hann, W.J. et al. 1997 Landscape dynamics of the Basin. Pp. 337-1,055 in: Quigley, T.M. and S.J. Arbelbide (eds.) An Assessment of Ecosystem Components in the Interior Columbia Basin and Portions of the Klamath and Great Basins: Volume II. USDA Forest Service, PNW-GTR-405 http://www.fs.fed.us/pnw/pubs/gtr405/pnw_gtr405aa.pdf	This reference was used indirectly, to show that wildfire activity is positively related to wind speed, negatively related to fuel moisture, and positively related to fuel loading. The association of road density to wildfire activity in these comments implies a false causation; road density, per se, does not increase wildfire activity, but may, for other reasons, be positively associated with it. The Middle Fork Weiser River proposes to reduce the miles of system and non-system roads, and establish a Minimum Road System under each action alternative. The effects of using roads for haul routes, road maintenance, construction of temporary roads, and decommissioning of roads are discussed under each resource section in FEIS Chapter 3.
3.83	**Attachment 4 - Road Construction Opposing View #23** - "Many forested landscapes are fragmented by roads, but our understanding of the effects of these roads on the function and diversity of the surrounding forest is in its infancy. I investigated the effect of roads in otherwise continuous forests on the macroinvertebrate fauna of the soil. I took soil samples along transects leading away from the edges of unpaved roads in the Cherokee National Forest in the Southern Appalachian mountains of the United States. Roads significantly depressed both the abundance and the richness of the macroinvertebrate soil fauna. Roads also significantly reduced the depth of the leaf-litter layer. These effects persisted up to 100 m into the forest. Wider roads and roads with more open canopies tended to produce steeper declines in abundance, richness, and leaf-litter depth, but these effects were significant only for canopy cover and litter depth. The macroinvertebrate fauna of the leaf litter plays a pivotal role in the ability of the soil to process energy and nutrients. These macroinvertebrates also provide prey for vertebrate species such as salamanders and ground-foraging birds. The effect of roads on the surrounding forest is compounded by the sprawling nature of the road system in this and many other forests. My data suggest that even relatively narrow roads through forests can produce marked edge	The cited study took place on the Cherokee National Forest where hardwood tree species that produce leaf litter are predominant. The Payette National Forest does not have tree species that produce leaf litter as described in the cited study. FEIS section 3.7 describes Total Soil Resource Commitment (TSRC) and discusses the varying ranges of TSRC from road activities by alternative. TSRC is a metric used to characterize how roads influence soil productivity.

#	Citation	Forest Service Response
	effects that may have negative consequences for the function and diversity of the forest ecosystem." Haskell, David G. Ph.D. 1999 "Effects of Forest Roads on Macroinvertebrate Soil Fauna of the Southern Appalachian Mountains" http://www.jstor.org/stable/2641904	
3.84	**Attachment 4 - Road Construction Opposing View #24** - "Roads remove habitat, alter adjacent areas, and interrupt and redirect ecological flows. They subdivide wildlife populations, foster invasive species spread, change the hydrologic network, and increase human use of adjacent areas. At broad scales, these impacts cumulate and define landscape patterns." Hawbaker, Todd J. Ph.D., Volker C. Radeloff Ph.D., Murray K. Clayton Ph.D., Roger B. Hammer Ph.D., and Charlotte E. Gonzalez-Abraham Ph.D."Road Development, Housing Growth, and Landscape Fragmentation In Northern Wisconsin: 1937–1999" Ecological Applications: Vol. 16, No. 3, pp. 1222-1237. http://www.esajournals.org/doi/abs/10.1890/1051-0761%282006%29016%5B1222%3ARDHGAL%5D2.0.CO%3B2?journalCode=ecap	The cited reference looks at the dynamics of road networks over time and how they impact landscape patterns. More specifically, the study looked at relationships between road density changes, development, and landscape patterns, focusing on housing development. From a wildlife standpoint, the reference mentions in a broad context that roads can contribute to habitat fragmentation, the spread of invasive species, and increased human use or presence. The Middle Fork Weiser River proposes to reduce the miles of system and non-system roads, and establish a Minimum Road System under each action alternative. The effects of using roads for haul routes, road maintenance, construction of temporary roads, and decommissioning of roads are discussed under each resource section in FEIS Chapter 3.
3.85	**Attachment 4 - Road Construction Opposing View #25** - "Last winter was unusually wet in the Pacific Northwest. The result was landslides all over caused by logging roads; five people died, spawning streams were ruined, water supplies were contaminated and the flooding was tremendously aggravated. According to David Bayles, conservation director of the Pacific Rivers Council, aerial surveys documented more than 650 landslides in February in Washington and Oregon alone. The stupidest and most dangerous practice is allowing logging roads on steep slopes — that's really asking for it. You may ask yourself why the taxpayers are expected to pony up to	The effects of proposed activities, including road-related activities, on slope stability were addressed in detail in FEIS section 3.7. Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.5 (Watershed Resources). The effects of sedimentation on channel pattern and morphology, including bank stability and channel width, were analyzed, and the discussion is included in FEIS section 3.5 (Watershed Resources).

#	Citation	Forest Service Response
	build roads for profitable logging companies. Build roads for the timber companies in order to stimulate the U.S. logging, paper and building industries. There's just one problem. A lot of U.S. logs get shipped overseas, mostly to Japan. We're actually subsidizing Japanese companies while doing terrible damage to our environment and not helping the U.S. job scene much except when it comes to cutting Start with the assumption that the U.S. Forest Service a component of the Department of Agriculture, is simply an auxiliary branch of the timber industry and you'll pretty much have the picture of what's going on. Last winter, the Forest Service refused a bid at a timber auction from an environmentalist who wanted to save, not harvest, a stand of evergreens in the Okanogan National Forest in Washington. Instead, the Forest Service accepted a bid of $15,000 from a logging company that cut 3.5 million board-feet of lumber in that stand. Try to find a price like that at Home Depot." Ivins, Molly Creators Syndicate, August 3 1997 08 03 http://www.creators.com/opinion/molly-ivins/molly-ivins-august-3-1997-08-03.html	Change in drainage network, change in peak/base flows, and disturbance regime (including slope stability) due to roads have been analyzed, and the discussion is included in FEIS sections 3.5 and 3.7 (Watershed Resources and Soil Resources). As to exporting logs overseas, 36 CFR 223.188 specifically prohibits the exporting of unprocessed federal timber: **36 CFR 223.188: Prohibitions against exporting unprocessed Federal timber:** *No person who acquires unprocessed timber originating from Federal lands west of the 100th meridian in the contiguous 48 States may export such timber from the United States, or sell, trade, exchange, or otherwise convey such timber to any other person for the purpose of exporting such timber from the United States. This prohibition does not apply to specific quantities of grades and species of such unprocessed Federal timber that the Secretary of Agriculture determines to be surplus to domestic manufacturing needs.*
3.86	**Attachment 4 - Road Construction Opposing View #26** - "Although disturbance patches are created by peak flow and debris flow disturbances in mountain landscapes without roads, roads can alter the landscape distributions of the starting and stopping points of debris flows, and they can alter the balance between the intensity of flood peaks and the stream network's resistance to change." Jones, Julia A. Ph.D., Frederick J. Swanson Ph.D. Beverley C. Wemple Ph.D., and Kai U. Snyder. "Effects of roads on hydrology, geomorphology, and disturbance patches in stream networks." Conservation Biology 14, No. 1. 2000. http://www.jstor.org/stable/2641906	Change in drainage network, change in peak/base flows, and disturbance regime (including slope stability) due to roads have been analyzed, and the discussion is included in FEIS sections 3.5 and 3.6.

#	Citation	Forest Service Response
3.87	**Attachment 4 - Road Construction Opposing View #27** - "In the Pacific Northwest, the two main processes that contribute to sediment production are mass failure and surface erosion from forest roads (Fredriksen 1970, Reid and Dunne 1984). In the Clearwater River basin in the State of Washington, as much as 40 percent of the sediment produced in the watershed was attributed to logging roads (Reid 1980)." Kahklen, Keith. "A Method for Measuring Sediment Production from Forest Roads." Pacific Northwest Research Station, USDA Forest Service. Research note PNW-RN-529, April 2001. http://www.fs.fed.us/pnw/pubs/rn529.pdf	FEIS section 3.7 includes discussion on the current science and guidance applied to the analysis of management activities that may influence slope stability. This section discloses the potential direct, indirect, and cumulative effects of the timber harvest and road activities on slope stability under the different alternatives. Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS 3.5.
3.88	**Attachment 4 - Road Construction Opposing View #28** - "It is indisputable that roads are one of the greatest threats to the ecological integrity of forested systems and associated river, wetland, lake, and coastal ecosystems. Yet, the USFS has failed to adopt a policy that mandates reversing the worst ecological effects of roads, or that precludes incursion of roads into roadless areas. Despite widespread recognition of these facts, the USFS diverts staff and money to extraordinarily costly salvage logging projects at the expense of reducing the extent of the road network or undertaking needed fine- fuels reductions in unburned forests." Karr, James R. Ph.D., Christopher A. Frissell Ph.D., Jonathan J. Rhodes, David L. Perry Ph.D. and G. Wayne Minshall Ph.D. Excerpt from a letter to the Subcommittee on Forests & Forest Health U.S. House of Representatives. 3 July, 2002. http://www.nativeforest.org/campaigns/wildfire_info_center/letter_from_beschta.htm	Forest Service policy concerning road management is found in part in the Code of Federal Regulations and Forest Service Manual (FSM) direction. FSM 7710.1 states the following: **1. Travel Management (36 CFR Part 212, Subparts A, B, and C).** Subpart A of these regulations establishes requirements for administration of the forest transportation system, including roads, trails, and airfields, and contains provisions for acquisition of rights-of-way. Subpart A also requires identification of the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of NFS lands and use of a science-based roads analysis at the appropriate scale in determining the minimum road system. Subpart B describes the requirements for designating roads, trails, and areas for motor vehicle use and for identifying designated roads, trails, and areas on a motor vehicle use map (MVUM). Subpart C provides for regulation of use of over-snow vehicles on NFS roads, on NFS trails, and in areas on NFS lands. Forest Service Manual 7712, Travel Analysis, states the following: *Travel analysis assesses the current forest transportation system and identifies issues and assesses benefits, problems,*

#	Citation	Forest Service Response
		and risks to inform decisions related to identification of the minimum road system per 36 CFR Part 212.5(b)(1) and designation of roads, trails and areas for motor vehicle use per 36 CFR Part 212.51. Travel analysis is not a decisionmaking process. Rather, travel analysis informs decisions relating to administration of the forest transportation system and helps to identify proposals for changes in travel management direction (ex. 01). The Travel Analysis Report for the Middle Fork Weiser River Project area (see project record) assessed the risks and problems posed by existing roads within the subwatersheds by resource area including safety, watershed and aquatic, terrestrial wildlife, noxious weeds, financial, roads and inventoried roadless area risks. The ratings for each of the resource risks were then compiled to assign a composite risk rating to each road. The report lists the individual road ratings that were used to inform the decision-making process where roads within the project area are concerned. As to the construction of new roads in roadless areas, National Forests in Idaho are governed by 36 CFR Part 294, Special Areas; Roadless Area Conservation; Applicability to the National Forests in Idaho; Final Rule. In the case of the Middle Fork Weiser River project, no road management activities are proposed in roadless areas.
3.89	**Attachment 4 - Road Construction Opposing View #29** - "Forest fragmentation, as scientists call the intentional felling of woodland, is actually two processes. In populated areas such as the Atlantic seaboard, it means reduction in the size of forest tracts, usually due to suburbanization and development. In less inhabited areas--northern New England, for example--forest fragmentation refers to isolation of one patch of forest from another by logging, or by the building of	Road Construction Opposing View #29 addresses the issue of fragmentation; however, the specific point presented by this view and its relevance to the Middle Fork Weiser River Project are unclear. See responses to Road Construction Opposing View #21 and #23 for discussions relating to fragmentation.

#	Citation	Forest Service Response
	roads or power lines." Lawren, Bill 1992 "Singing the Blues for Songbirds: Bird lovers lament as experts ponder the decline of dozens of forest species" National Wildlife http://www.nwf.org/News-and-Magazines/National-Wildlife/Birds/Archives/1992/Singing-the-Blues-for-Songbirds.aspx	
3.90	**Attachment 4 - Road Construction Opposing View #30** - "The compaction of forest road soils is known to reduce aeration, porosity, infiltration rates, water movement, and biological activity in soils. Research indicates that soil bulk density, organic matter, moisture, and litter depths are much lower on roads than on nearby forest lands. Macropores, which provide soil drainage and infiltration, have been shown to significantly decrease in size as a result of road construction and use. Reduced infiltration and increased compaction promote soil erosion, especially during the seasonal southwestern monsoon rains (Elseroad 2001)." "Physical disturbances caused by road construction and vehicle use create ideal conditions for colonization by invasive exotic plant species. The use of roads by vehicles, machinery, or humans often aids the spread of exotic plant seeds. Once established, they can have long-term impacts on surrounding ecosystems and can be difficult to remove." "Roads are known to cause habitat fragmentation. Many create ecological 'edges' with different plant species, light levels, and hiding cover, all of which may alter animal survival, reproductive success, and movement patterns. The introduction of exotic plants can disrupt the availability of native vegetation used by wildlife for food and shelter (Trombulak and Frissell 1999)." "Forest roads often develop a water-repellent soil layer caused by lack of vegetative cover and changes in soil composition. This can substantially influence how runoff is processed. Erosion, the	The cited reference looks at the dynamics of road networks over time and how they impact landscape patterns. More specifically, the study looked at relationships between road density changes, development, and landscape patterns, focusing on housing development. From a wildlife standpoint, the reference mentions in a broad context that roads can contribute to habitat fragmentation, the spread of invasive species, and increased human use or presence. Please see responses to road construction opposing views #1 and #21 for more specifics on how effects to wildlife and wildlife habitat were addressed in the FEIS. FEIS section 3.7 describes Total Soil Resource Commitment (TSRC), which is the conversion of productive land to essentially nonproductive sites for periods of >50 years. TSRC is a metric that can be used to characterize how roads influence soil and hydrologic processes across forested lands. Section 3.7 discusses the varying ranges of TSRC from road activities by alternative.

#	Citation	Forest Service Response
	formation of water channels beside the road, and increased sediment loads in nearby streams are common results of this process (Baker 2003)." "Because they provide easier access to many forest tracts, forest roads often allow more human-caused fires to be ignited." Lowe, Kimberly Ph.D.,"Restoring Forest Roads." A Northern Arizona University Ecological Restoration Institute publication Working Paper 12. June, 2005. http://www.eri.nau.edu/en/information-for-practitioners/restoring-forest-roads	
3.91	**Attachment 4 - Road Construction Opposing View #31** - "Almost everywhere people live and work they build and use unimproved roads, and wherever the roads go, a range of environmental issues follows." "Among the environmental effects of unimproved roads, those on water quality and aquatic ecology are some of the most critical. Increased chronic sedimentation, in particular, can dramatically change the food web in affected streams and lakes." "The nearly impervious nature of road surfaces (or treads) makes them unique within forested environments and causes runoff generation even in mild rainfall events, leading to chronic fine sediment contributions." "If we look at the issue of what we need to learn or the research priorities for forest road hydrology, I would argue that the areas of cutslope hydrology and effectiveness of restoration efforts are perhaps most critical." "At a few sites in the mountains of Idaho and Oregon a substantial portion of the road runoff (80–95%) came from subsurface flow intercepted by the cutslope (Burroughs et al., 1972; Megahan, 1972;	Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.5.

#	Citation	Forest Service Response
	Wemple, 1998)." Luce, Charles H. Ph.D., 2002. "Hydrological processes and pathways affected by forest roads: what do we still need to learn?" Hydrologic Processes: 16, 2901–2904. http://www.fs.fed.us/rm/boise/teams/soils/Publications/Luce%202002%20HP.pdf	
3.92	**Attachment 4 - Road Construction Opposing View #32** - "Roads in the watershed contribute to sediment production by concentrating runoff, thereby increasing sediment load to the stream network. Most unimproved (dirt) roads connect either directly or indirectly with streams and, therefore, act as extensions of stream networks by effectively increasing watershed drainage density and subsequently sediment loads to streams. In the South Fork subwatershed of Squaw Creek, road connectivity has resulted in an increase in effective drainage density of approximately 250%. Throughout the Squaw Creek watershed, it is estimated that dirt roads potentially contribute as much as 7,793 metric tons/year to the watershed sediment budget." Maholland, Becky and Thomas F. Bullard Ph.D., "Sediment-Related Road Effects on Stream Channel Networks in an Eastern Sierra Nevada Watershed." Journal of the Nevada Water Resources Association, Volume 2, Number 2, Fall 2005. http://www.nvwra.org/docs/journal/vol_2_no_2/NWRAjournal_fall2005	Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.6. Change in drainage network and change in peak/base flows due to roads have been analyzed, and the discussion is included in FEIS section 3.5 (Watershed Resources).
3.93	**Attachment 4 - Road Construction Opposing View #33** - "One of the greatest impacts of roads and (especially motorized) trails is their effect on the hydrology of natural landscapes, including the flow of surface and ground water and nutrients. These hydrologic effects are re¬sponsible for changes to geomorphic processes and sediment loads in roaded areas (Luce and Wemple 2001)." (pg. 12) Malecki, Ron W. "A New Way to Look at Forest Roads: the	Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.6. Change in drainage network and change in peak/base flows due to roads have been analyzed, and the discussion is included in FEIS section 3.5 (Watershed Resources).

#	Citation	Forest Service Response
	Road Hydrologic Impact Rating System (RHIR)” The Road-RI Porter, Autumn Equinox, 2006 http://www.wildlandscpr.org/files/uploads/RIPorter/rr_v11-3.pdf	
3.94	**Attachment 4 - Road Construction Opposing View #34** - "A study was made on 344 miles of logging roads in northwestern California to assess sources of erosion and the extent to which road-related erosion is avoidable. At most, about 24 percent of the erosion measured on the logging roads could have been prevented by conventional engineering methods. The remaining 76 percent was caused by site conditions and choice of alignment. On 30,300 acres of commercial timberland, an estimated 40 percent of the total erosion associated with management of the area was found to have been derived from the road system." McCashion, J. D. and R. M. Rice Ph.D. 1983. "Erosion on logging roads in northwestern California: How much is avoidable?" Journal of Forestry 8(1): 23-26. http://www.fs.fed.us/psw/rsl/projects/water/McCashion.pdf	Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.6. Change in drainage network and change in peak/base flows due to roads have been analyzed, and the discussion is included in FEIS section 3.5 (Watershed Resources).
3.95	**Attachment 4 - Road Construction Opposing View #35** - "Research has shown that roads can have adverse impacts on the water quality on the forest landscape (Authur et al. 1998; Binkley and Brown 1993; Megahan et al. 1991). The forest road system has been identified by previous research as the major source of soil erosion on forestlands (Anderson et. al 1976; Patric 1976; Swift 1984; Van Lear et al. 1997). Furthermore, roads are cited as the dominant source of sediment that reaches stream channels (Packer 1967; Trimble and Sartz 1957; Haupt 1959)." McFero III, Grace, J. "Sediment Plume Development from Forest Roads: How are they related to Filter Strip Recommendations?" An ASAE/CSAE Meeting Presentation, Paper Number: 045015, August 1-4, 2004.	Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.6. Change in drainage network and change in peak/base flows due to roads have been analyzed, and the discussion is included in FEIS section 3.5 (Watershed Resources).

#	Citation	Forest Service Response
	http://www.srs.fs.usda.gov/pubs/ja/ja_grace017.pdf	
3.96	**Attachment 4 - Road Construction Opposing View #36** - "Overall, roads had a greater impact on landscape structure than logging in our study area. Indeed, the 3-fold increase in road density between 1950–1993 accounted for most of the changes in landscape configuration associated with mean patch size, edge density, and core area." McGarigal, Kevin Ph.D., William H. Romme Ph.D.Michele Crist Ph.D.and Ed Roworth Ph.D. "Cumulative effects of roads and logging on landscape structurein the San Juan Mountains, Colorado (USA)" Landscape Ecology, Volume 16, Number 4 / May, 2001 http://www.springerlink.com/content/w12557624742tv77/	See response to Road Construction Opposing View #29.
3.97	**Attachment 4 - Road Construction Opposing View #37** - "Road construction in remote areas appears to be the major long term impact of resource extraction industries and the most significant problem facing grizzly bears in most locations. Open roads are an influence in all 5 ways that people affect bears. Vehicles on roads can harass bears, displace them from quality habitats, and cause reduced bear use of altered habitats, such as cutting units. Bears that are displaced from roads may cause social disruption in areas away from roads. Finally, roads permit access for many people and some of these will shoot bears." (Pg. 62) McLellan, Bruce N. "Relationships between Human Industrial Activity and Grizzly Bears" Bears: Their Biology and Management, Vol. 8 International Conference on Bear Research and Management February 1989 (1990), pp. 57-64 http://www.bearbiology.com/fileadmin/tpl/Downloads/URSUS/Vol_8/McClellan_8.pdf	Grizzly bears are not known to occur on the Payette National Forest, therefore this Opposing View is outside the scope of this project.
3.98	**Attachment 4 - Road Construction Opposing View #38** - "Erosion from forest roads can be a large source of sediment in watersheds managed for timber production."	Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.6.

#	Citation	Forest Service Response
	Megahan, Walter F. Ph.D. "Predicting Road Surface Erosion from Forest Roads in Washington State" from a presentation presented at the 2003 Geological Society of America meeting. http://gsa.confex.com/gsa/2003AM/finalprogram/abstract_67686.htm	Change in drainage network and change in peak/base flows due to roads have been analyzed, and the discussion is included in FEIS section 3.5 (Watershed Resources).
3.99	**Attachment 4 - Road Construction Opposing View #39** - "Today, addressing the adverse impacts of forest roads is consistently identified as one of the highest watershed restoration priorities in U.S. forests—in many forested watersheds in the western United States there is a greater road density than stream density. It is simply irrational to spend millions of dollars subsidizing further forest road construction when we are simultaneously spending millions of dollars to offset detrimental effects associated with similar actions in the past." Montgomery, David Ph.D., Statement at a Press Conference with Senator Robert Torricelli about S. 977 and HR 1376), the Act to Save America's Forests April 28, 1998, U.S. Capitol http://www.saveamericasforests.org/news/ScientistsStatement.htm	See response to Road Construction Opposing View #28.
3.100	**Attachment 4 - Road Construction Opposing View #40** - "Nothing is worse for sensitive wildlife than a road. Over the last few decades, studies in a variety of terrestrial and aquatic ecosystems have demonstrated that many of the most pervasive threats to biological diversity - habitat destruction and fragmentation, edge effects, exotic species invasions, pollution, and overhunting - are aggravated by roads. Roads have been implicated as mortality sinks for animals ranging from snakes to wolves; as displacement factors affecting animal distribution and movement patterns; as population fragmenting factors; as sources of sediments that clog streams and destroy fisheries; as sources of deleterious edge effects; and as access corridors that encourage development, logging and poaching of rare plants and animals." "Most public agencies disregard the ecological impacts of roads, and attempt to justify timber roads as benefiting recreation and wildlife	The cited reference is an opinion piece that discusses the effects of all roads in general and potential mitigation measures to reduce the effects. Many of the effects discussed in this paper are those associated with paved, well-maintained, high-speed roads. However, it is recognized that lower-standard, unpaved Forest roads can have effects as well. Specifically, the article addresses the following potential road-related impacts: roadkill, road aversion, isolation of populations, barriers, negative edge effects, invasive weeds, loss of forest interior habitats, brown-headed cowbird parasitism, human access, poaching, collisions, snag removal, and increases in fire ignitions. In a section titled *Impacts on Terrestrial Habitat*, the article states that "A narrow logging road with no maintained verge would not be expected to generate substantial edge effects, particularly if

#	Citation	Forest Service Response
	management. Even when a land manager recognizes the desirability of closing roads, he or she usually contends that such closures would be unacceptable to the public." “The Forest Service and other public agencies will claim that road closures, revegetation, and other restorative measures are too expensive to be implemented on a broad scale. But much of the approximately $400 million of taxpayers' money squandered annually by the Forest Service on below-cost timber sales goes to road-building. Road maintenance is also expensive. Virtually all of this money could be channeled into road closures and associated habitat restoration. This work would be labor-intensive, and providing income to the many laid off loggers, timber sale planners, and road engineers -- for noble jobs, rather than jobs of destruction!” Noss, Reed F., Ph.D. 1995. “The Ecological Effects of Roads or the Road to Destruction” Wildlands CPR http://www.wildlandscpr.org/ecological-effects-roads	surrounded by a tall forest canopy. In this sense, the road would not differ much from a hiking trail (even trails create some edge effects, however, such as invasion of weedy plants caused by pant leg dispersal). As forest roads are ‘improved,’ road clearance increases and allows more penetration of sunlight and wind. Edge species are then attracted to these openings. Two-lane roads with maintained rights-of-way and all interstate highways are lined by edge habitat. A forest criss-crossed by improved roads may be largely edge habitat, and its value for conservation of native flora and fauna diminished accordingly.” This rationale acknowledges that small forest roads typically have much less of an impact on wildlife than larger, higher-volume road systems. All project action alternatives would reduce road density across all project area subwatersheds.
3.101	**Attachment 4 - Road Construction Opposing View #41** - “Numerous studies have reported lower densities of breeding Ovenbirds (Seiurus aurocapillus) adjacent to forest edges. However, none of these studies has considered habitat use and reproductive success to address mechanisms underlying the observed pattern, and most were conducted in fragmented landscapes and ignored juxtapositions of forest with narrow openings such as roads. We studied the influence of forest roads on Ovenbird density in an extensively forested region of Vermont, evaluating habitat use and reproductive success relative to mechanisms proposed to explain the density-edge relationship. Territory densities on seven study plots were 40% lower within edge areas (0 to 150 m from unpaved roads) than within interior areas (150 to 300 m from roads). We simulated the distribution of Ovenbird territories and concluded that passive displacement, where birds perceive habitat interfaces as boundaries and limit their territories entirely to forest habitat, did not account for the observed density-	Ovenbirds were not analyzed for this project, as this species’ range does not overlap with the analysis area, or is the species found within the state of Idaho. However, the focus of the cited document is primarily the negative edge effects of roads on forest interior species, a topic that does apply to the proposed project. All project action alternatives would reduce road density across all project area subwatersheds, which is expected to have a beneficial effect on most wildlife species.

#	Citation	Forest Service Response
	edge pattern. Territory size was inversely related to distance from roads, providing an alternative explanation for reduced densities near edges and suggesting that habitat quality was higher away from roads. Pairing success was lower within edge areas than within interior zones, but the difference was not statistically significant. The proportion of males that produced fledglings did not differ between edge and interior areas. We conclude that habitat quality for Ovenbirds may be lower within 150 m of unpaved roads in extensive forested landscapes, affecting territory density and possibly reproductive success." Ortega, Yvette K.; Capen, David E. 1999. "Effects of forest roads on habitat quality for Ovenbirds in a forested landscape" Auk. 116(4): 937-946. http://www.fs.fed.us/rm/pubs_other/rmrs_1999_ortega_y001.html	
3.102	**Attachment 4 - Road Construction Opposing View #42** - "Increasingly, previously extensive, continuous tracts of forest are being reduced to widely dispersed patches of remnant forest vegetation by logging and road- building, but few measures of the effects of roads on forest fragmentation are available. Fragmentation affects animal populations in a variety of ways, including decreased species diversity and lower densities of some animal species in the resulting smaller patches. This study seeks to quantify the effects of roads and logging activities on forest habitat." "Roads precipitate fragmentation by dissecting previously large patches into smaller ones, and in so doing they create edge habitat in patches along both sides of the road, potentially at the expense of interior habitat. As the density of roads in landscapes increases, these effects increase as well. McGurk and Fong (1995) considered the additive effects of clearcuts and roads, but did not measure the amount of associated edge habitat. Thus a more direct measurement of the impacts of roads on landscapes is needed."	This study looked at habitat fragmentation from a negative edge effect standpoint in coniferous forests of Wyoming and how the fracturing of interior forests may impact forest interior species. The study concluded that roads associated with logging activities often have potentially detrimental impacts on animal and plant communities. The authors suggested that timber harvests should be planned to minimize impact on the landscape and exacerbation of the current landscape fragmentation problems on many forestlands. All project action alternatives would reduce road density across all project area subwatersheds, which is expected to have a beneficial effect on most wildlife species.

#	Citation	Forest Service Response
	Reed, R.A., Johnson-Barnard, J., and Baker, W.A. 1996. "Contribution of Roads to Forest Fragmentation in the Rocky Mountains." Conservation Biology 10: 1098-1106. http://cpluhna.nau.edu/Research/contribution_of_roads_to_forest_.htm	
3.103	**Attachment 4 - Road Construction Opposing View #43** - "Erosion on roads is an important source of fine-grained sediment in streams draining logged basins of the Pacific Northwest. Runoff rates and sediment concentrations from 10 road segments subject to a variety of traffic levels were monitored to produce sediment rating curves and unit hydrographs for different use levels and types of surfaces. These relationships are combined with a continuous rainfall record to calculate mean annual sediment yields from road segments of each use level. A heavily used road segment in the field area contributes 130 times as much sediment as an abandoned road. A paved road segment, along which cut slopes and ditches are the only sources of sediment, yields less than 1% as much sediment as a heavily used road with a gravel surface." Reid, L. M. Ph.D. and T. Dunne (1984), "Sediment Production from Forest Road Surfaces," Water Resour. Res., 20(11), 1753–1761. http://www.agu.org/pubs/crossref/1984/WR020i011p01753.shtml	Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.6.
3.104	**Attachment 4 - Road Construction Opposing View #44** - "Roads are associated with high sediment inputs and altered hydrology, both of which can strongly influence downstream channel habitats. Roads are also important as a source of indirect human impacts and as an agent of vegetation change and wildlife disturbance." "Any ground disturbance increases the potential for erosion and hydrologic change, and roads are a major source of ground disturbance in wildlands. Compacted road surfaces generate overland flow, and much of this flow often enters the channel system, locally increasing peak flows. Localized peak flows are also	Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.6. Change in drainage network and change in peak/base flows due to roads have been analyzed, and the discussion is included in FEIS section 3.5 (Watershed Resources).

#	Citation	Forest Service Response
	increased where roads divert flow from one swale into another, and where roadcuts intercept subsurface flows." "Overland flow from the road surface is a very effective transport medium for the abundant fine sediments that usually are generated on road surfaces. Road drainage also can excavate gullies and cause landslides downslope in swales. Cut and fill slopes are often susceptible to landsliding, and road-related landsliding is the most visible forestry-related erosional impact in many areas." Reid, Leslie M. Ph.D., Robert R. Ziemer Ph.D., and Michael J. Furniss 1994. "What do we know about Roads?" USDA Forest Service. http://www.fs.fed.us/psw/publications/reid/4Roads.htm	
3.105	**Attachment 4 - Road Construction Opposing View #45** - "Disturbances from roadbuilding and logging changed the sediment/discharge relationship of the South Fork from one which was supply dependent to one which was stream power dependent, resulting in substantial increases in suspended sediment discharges." "Road construction and logging appear to have resulted in increases in average turbidity levels (as inferred from suspended sediment increases) above those permitted by Regional Water Quality Regulations." Rice, Raymond M. Ph.D., Forest B. Tilley and Patricia A. Datzman. 1979. "Watershed's Response to Logging and Roads: South Fork of Caspar Creek, California, 1967-1976." USDA Forest Service, Research Paper PSW-146. http://www.fs.fed.us/psw/publications/rice/Rice79.pdf	Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.6. Change in drainage network and change in peak/base flows due to roads have been analyzed, and the discussion is included in FEIS section 3.5 (Watershed Resources).
3.106	**Attachment 4 - Road Construction Opposing View #46** - "Sediment eroded from gravel roads can be a major component of the sediment budget in streams in this region (Van Lear, et al, 1995)."	Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.6. Change in drainage network and change in peak/base flows due to

#	Citation	Forest Service Response
	Riedel, Mark S. Ph.D. and James M. Vose Ph.D., "Forest Road Erosion, Sediment Transport and Model Validation in the Southern Appalachians." Presented at the Second Federal Interagency Hydrologic Modeling Conference, July 28 – August 1, 2002. http://www.srs.fs.usda.gov/pubs/ja/ja_riedel002.pdf	roads have been analyzed, and the discussion is included in FEIS section 3.5 (Watershed Resources).
3.107	**Attachment 4 - Road Construction Opposing View #47** - "Early studies of elk were among the first to address effects of roads on wildlife, establishing a precedent for subsequent research on a wide range of terrestrial and aquatic species. These early elk-roads studies included those reported in a symposium on the topic in 1975 (Hieb 1976), the seminal studies of Jack Lyon in Montana and northern Idaho (Lyon 1979, 1983, 1984), the Montana Cooperative Elk-Logging Study (Lyon et al. 1985), and work by Perry and Overly (1977) in Washington and Rost and Bailey (1979) in Colorado. As research and analysis techniques have become more sophisticated, particularly with the advent of geographic information systems (GIS) and high-resolution remote imagery, the study of effects of roads on terrestrial and aquatic communities has evolved into a unique discipline of "road ecology" (Forman et al. 2003). Road effects are far more pervasive than originally believed and include such disparate consequences as population and habitat fragmentation, accelerated rates of soil erosion, and invasion of exotic plants along roadways. Indeed, "in public wildlands management, road systems are the largest human investment and the feature most damaging to the environment" (Gucinski et al. 2001:7). Summaries of the effects of roads on wildlife habitats and biological systems in general have been compiled by Forman and Alexander (1998), Trombulak and Frissell (2000), Gucinski et al. (2001), Forman et al. (2003) and Gaines et al. (2003)." Rowland, M. M., M. J. Wisdom, B. K. Johnson, and M. A. Penninger 2005. "Effects of Roads on Elk: Implications for Management in Forested Ecosystems." Pages 42-52 in Wisdom, M. J., technical	The cited document describes the current knowledge on road effects to elk; outlines how a distance-band approach could be used instead of the traditional road density approach to assess road effects to elk and habitat effectiveness; and discusses the broader implications of road-related policies and land management with regard to elk. This document was used in the effects analysis for elk and referenced accordingly. The effects analysis for elk is located in FEIS section 3.4. The elk effects analysis for the FEIS used a distance-band approach similar to the example provided in view #47, although specific components and methods differed between the FEIS and the reference cited. The indicator used to assess impacts to elk and elk habitat for the Middle Fork Weiser River project was the amount and distribution of security cover habitat > 0.5 miles from open motorized routes (FEIS, section 3.4).

#	Citation	Forest Service Response
	editor, The Starkey Project: a synthesis of long-term studies of elk and mule deer Reprinted from the 2004 Transactions of the North American Wildlife and Natural Resources Conference, Alliance Communications Group. http://www.fs.fed.us/pnw/pubs/journals/pnw_2004_rowland001.pdf	
3.108	**Attachment 4 - Road Construction Opposing View #48** - "The consequences of road construction to wildlife are generally negative. Roads result in increased human access, habitat fragmentation, disturbance, and in some cases direct mortality due to vehicle collisions." "Research has documented an 80% decline in grizzly bear habitat use within 1 km of open roads used by motorized vehicles in Montana9. This has been ascribed either to bears avoiding humans or to the selective over-harvest of bears habituated to humans that would otherwise more fully use areas heavily influenced by people." Schwartz, Chuck Ph.D. - March 1998 "Wildlife and Roads" The Interagency Forest Ecology Study Team (INFEST) newsletter http://www.sf.adfg.state.ak.us/sarr/forestecology/fsroads.cfm	The cited article addresses road-related habitat issues in Alaska and speaks specifically about effects to grizzly/brown bears. While the article itself does not apply specifically to the Middle Fork Weiser River project, it does list some of the impacts roads can have on wildlife in general. The article also states that "Big game have been shown to avoid habitat adjacent to roads for up to ½ mile." This distance (0.5 miles) was used for the indicator (amount and distribution of security cover habitat > 0.5 miles from open motorized routes) for elk in the Middle Fork Weiser River analysis area (FEIS, section 3.4). Collision as a factor of road fragmentation typically is associated with larger, high-speed highways; therefore, view #48 does not apply to the Middle Fork Weiser River project. For a response that relates more specifically to fragmentation, human access, and disturbance, please see response to view #40.
3.109	**Attachment 4 - Road Construction Opposing View #49** - "The effects of forest roads on hydrology are related to the effects of forest clearing. Most logging requires road access, and the roads often remain after the logging, so there are both short and long-term effects.94 Forest road surfaces are relatively impermeable. Water readily runs over the road surface and associated roadside ditches, often directly to a stream channel, with the net effect of extending channel networks and increasing drainage density.95 In addition to providing conduits for overland flow, forest roads involve slope-cuts and ditching that may intersect the water table and interrupt natural subsurface water movement.96 This diversion of subsurface water	Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.6. The effects of sedimentation on channel pattern and morphology, including bank stability and channel width, were analyzed, and the discussion is included in section 3.5. Change in drainage network, change in peak/base flows, and disturbance regime (including slope stability) due to roads have been analyzed, and the discussion is included in FEIS sections 3.5 and 3.7.

#	Citation	Forest Service Response
	quantitatively more important than the overland flow of storm water in some watersheds.97 The importance of roads in altering basin hydrology has been underscored in paired-watershed studies and recent modeling studies.98 " (Pgs. 730 and 731) Shanley, James B. and Beverley Wemple Ph.D. "Water Quantity and Quality in the Mountain Environment" Vermont Law Review, Vol. 26:717, 2002 http://www.uvm.edu/~bwemple/pubs/shanley_wemple_law.pdf	
3.110	**Attachment 4 - Road Construction Opposing View #50** - "Roads are often the major source of soil erosion from forested lands (Patric 1976)." "Generally, soil loss is greatest during and immediately after construction." Swift Jr., L. W. "Soil losses from roadbeds and cut and fill slopes in the Southern Appalachian Mountains." Southern Journal of Applied Forestry 8: 209-216. 1984.	Soil erosion or sediment production and delivery resulting from roads and other proposed management activities were fully addressed in FEIS sections 3.3 and 3.4.
3.111	**Attachment 4 - Road Construction Opposing View #51** - "More subtle causes of habitat loss include the construction of roads and power lines. These linear barriers also have been correlated with a decline in neotropical migrant songbirds (Berkey 1993; Boren et al. 1999; Ortega and Capen 2002). Whether by forest conversion or the construction of roads and power lines, fragmentation subdivides habitat into smaller and smaller parcels. The result is an increase of edge habitat, or the boundary between intact forest and surrounding impacted areas. Small forests with large amounts of edge habitat are a hostile landscape for nesting neotropical migratory songbirds. In these areas, songbirds face two great threats: 1) the loss of eggs and nestlings to predators and, 2) parasitism by cowbirds."	This article addresses potential causes for the apparent decline in songbird populations, listing loss of habitat as the major factor and construction of roads and power lines as a more subtle cause. According to the article, the primary issue in regard to road fragmentation of songbird habitat is creation of edge habitat and the fracturing of interior forest habitat, which can lead to nest predation, brood parasitism, noise disturbance, or avoidance. The Middle Fork Weiser River project is not expected to result in negative effects to migratory birds. See FEIS Appendix G.

#	Citation	Forest Service Response
	Fragmentation, and the Decline of Neotropical Migratory Songbirds" Wildlands CPR, September 8, 2003 http://www.wildlandscpr.org/node/213	
3.112	**Attachment 4 - Road Construction Opposing View #52** - "Roads are a widespread and increasing feature of most landscapes. We reviewed the scientific literature on the ecological effects of roads and found support for the general conclusion that they are associated with negative effects on biotic integrity in both terrestrial and aquatic ecosystems. Roads of all kinds have seven general effects: mortality from road construction, mortality from collision with vehicles, modification of animal behavior, alteration of the physical environment, alteration of the chemical environment, spread of exotics, and increased use of areas by humans. Road construction kills sessile and slow-moving organisms, injures organisms adjacent to a road, and alters physical conditions beneath a road. Vehicle collisions affect the demography of many species, both vertebrates and invertebrates; mitigation measures to reduce roadkill have been only partly successful. Roads alter animal behavior by causing changes in home ranges, movement, reproductive success, escape response, and physiological state. Roads change soil density, temperature, soil water content, light levels, dust, surface waters, patterns of runoff, and sedimentation, as well as adding heavy metals (especially lead), salts, organic molecules, ozone, and nutrients to roadside environments. Roads promote the dispersal of exotic species by altering habitats, stressing native species, and providing movement corridors. Roads also promote increased hunting, fishing, passive harassment of animals, and landscape modifications. Not all species and ecosystems are equally affected by roads, but overall the presence of roads is highly correlated with changes in species composition, population sizes, and hydrologic and geomorphic processes that shape aquatic and riparian systems. More experimental research is needed to complement post-hoc correlative studies. Our review underscores the importance to conservation of avoiding construction of new roads in roadless or sparsely roaded	The cited reference is a literature review that addresses the effects of roads on terrestrial and aquatic resources. It recommends building no roads in sparsely or unroaded areas and encourages removal of unneeded roads. More specifically, this reference identifies the following road-related impacts: mortality from road construction, mortality from collision with vehicles, modification of animal behavior, alteration of the physical environment, spread of exotics, and increased use of areas by humans (hunting, general disturbance, landscape modification). The Middle Fork Weiser River proposes to reduce the miles of system and non-system roads, and establish a Minimum Road System under each action alternative. The effects of using roads for haul routes, road maintenance, construction of temporary roads, and decommissioning of roads are discussed under each resource section in FEIS Chapter 3.

#	Citation	Forest Service Response
	areas and of removal or restoration of existing roads to benefit both terrestrial and aquatic biota." Trombulak, Stephen C. Ph.D. and Christopher A. Frissell Ph.D. "Review of Ecological Effects of Roads on Terrestrial and Aquatic Communities" Conservation Biology, Volume 14, No. 1, Pages 18–30, February 2000 http://www.transwildalliance.org/resources/200922144524.pdf	
3.113	**Attachment 4 - Road Construction Opposing View #53** - "Roads are a major contributor to habitat fragmentation because they divide large landscapes into smaller patches and convert interior habitat into edge habitat. As additional road construction and timber harvest activities increase habitat fragmentation across large areas, the populations of some species may become isolated, increasing the risk of local extirpations or extinctions (Noss and Cooperrider 1994)." "Habitat fragmentation creates landscapes made of altered habitats or developed areas fundamentally different from those shaped by natural disturbances that species have adapted to over evolutionary time (Noss and Cooperrider 1994 in Meffe et al. 1997). Adverse effects of habitat fragmentation to both wildlife populations and species include: "Increased isolation of populations or species, which leads to: • Adverse genetic effects; i.e. inbreeding depression (depressed fertility and fecundity, increased natal mortality) and decreased genetic diversity from genetic drift and bottlenecks, • Increased potential for extirpation of localized populations or extinction of narrowly distributed species from catastrophic events such as hurricanes, wildfires or disease outbreaks,	The cited document is a resource to assist in assessing the potential impacts of roads and highways on terrestrial and aquatic habitats, species, and ecosystem processes. It is a review document, compiled from relatively current peer-reviewed and scientific "grey" literature that presents a range of potential impacts of roads and highways to species, habitats, and ecological processes. The document concentrates on elk but is applicable to most other wildlife species. The effects of using roads for haul routes, road maintenance, construction of temporary roads, and decommissioning of roads are discussed under each resource section in FEIS Chapter 3.

#	Citation	Forest Service Response
	• Changes in habitat vegetative composition, often to weedy and invasive species, • Changes in the type and quality of the food base, • Changes in microclimates by altering temperature and moisture regimes, • Changes in flows of energy and nutrients, • Changes in the availability of cover and increases edge effect, bringing together species that might otherwise not interact, potentially increasing rates of predation, competition and nest parasitism, and • Increased opportunities for exploitation by humans, such as poaching or illegal collection for the pet trade." Watson, Mark L. "Habitat Fragmentation and the Effects of Roads on Wildlife and Habitats." Background and Literature Review 2005. http://www.wildlife.state.nm.us/conservation/habitat_handbook/documents/2004EffectsofRoadsonWildlifeandHabitats.pdf	
3.114	**Attachment 4 - Road Construction Opposing View #54** - "Our analysis also indicated that >70 percent of the 91 species are affected negatively by one or more factors associated with roads." "Roads in forested areas increase trapping pressures for martens and fishers, resulting in significantly higher captures in roaded versus unroaded areas (Hodgman and others 1994) and in logged versus unlogged areas, in which the difference was again attributed to higher road densities in logged stands (Thompson 1994). Secondary roads also might increase the likelihood that snags and logs will be removed for fuel wood. This could impact fishers, martens and flammulated owls, and also could have a negative effect on the prey base for goshawks (Reynolds and others 1992)."	Please see response to Road Construction Opposing View #1. The FEIS analyzed potential effects to the flammulated owl (FEIS, section 3.4) and northern goshawk (FEIS, section 3.4), and fisher (section 3.4). The American marten was not analyzed, as this species does not have status as Threatened, Endangered, Candidate, Proposed, Region 4 Sensitive, or Management Indicator Species.

#	Citation	Forest Service Response
	"An additional, indirect effect of roads is that road avoidance leads to underutilization of habitats that are otherwise high quality." Wisdom, Michael J., Richard S. Holthausen Ph.D. Barbara C. Wales Ph.D., Christina D. Hargis Ph.D. Victoria A. Saab Ph.D., Danny C. Lee Ph.D. Wendel J. Hann Ph.D. Terrell D. Rich, Mary M. Rowland, Wally J. Murphy, and Michelle R. Eames "Source Habitats for Terrestrial Vertebrates of Focus in the Interior Columbia Basin: Broad-Scale Trends and Management Implications Volume 2 – Group Level Results." USDA Forest Service, PNW-GTR-485, May 2000. http://maps.wildrockies.org/ecosystem_defense/Science_Documents/Wisdom_et_al_2000/Vol_2a.pdf	
3.115	**Attachment 4 - Road Construction Opposing View #55** - "According to the DEIS, the Forest now manages a total of 5,914 miles of roads across the Forest. Scientific literature has established that roads have numerous widespread, pervasive and, if left untreated, long-lasting biological and physical impacts on aquatic ecosystems that continue long after completion of construction. (Angermeier et al. 2004). Roads increase surface water flow, alter runoff patterns, alter streamflow patterns and hydrology, and increase sedimentation and turbidity. Roads are the main source of sediment to water bodies from forestry operations in the United States. (US EPA 2002). Road construction can lead to slope failures, mass wasting and gully erosion. Road crossings can act as barriers to movement for fish and other aquatic organisms, disrupting migration and reducing population viability. (Schlosser and Angermeier 1995). Chemical pollutants that enter streams via runoff, such as salt and lead from road use and management, compound these impacts. Most of these adverse effects are persistent and will not recover or reverse without human intervention. The techniques for road remediation are well established, agreed upon and readily available. (Weaver et al. 2006)." (Pg. 2)	Water quality and the effects of roads on sedimentation were analyzed, and the discussion is included in FEIS section 3.5. The effects of sedimentation on channel pattern and morphology, including bank stability and channel width, were analyzed, and the discussion is included in section 3.5. Change in drainage network, change in peak/base flows, and disturbance regime (including slope stability) due to roads have been analyzed, and the discussion is included in FEIS sections 3.5 and 3.7.

#	Citation	Forest Service Response
	Excerpt from a May 11, 2009 letter to the Rogue River-Siskiyou National Forest Travel Management Team http://www.pacificrivers.org/protection-defense/comment-letters/Rogue%20River%20Siskiyou%20TMP%20DEIS.pdf	
3.116	**Attachment 4 - Road Construction Opposing View #56** - "Fires do not leave a large road network in place (assuming the blaze was not suppressed otherwise there may be dozer lines, etc.). Logging creates roads that fragment habitat and generally increase human access, both of which affect the use of the land by wildlife. Moreover, roads and logging equipment can become vectors for the dispersal of weeds." Wuerthner, George 2008 "Ecological Differences between Logging and Wildfire" http://wuerthner.blogspot.com/2008/12/ecological-differences-	The effects of using roads for haul routes, road maintenance, construction of temporary roads, and decommissioning of roads are discussed under each resource section in FEIS Chapter 3.
3.117	**Attachment 4 - Road Construction Opposing View #57** - "Forest fragmentation occurs when large, contiguous blocks of forest are broken up into isolated islands by development, roads, or clearing for agriculture. Just as inbreeding among the royal families of Europe spread hemophilia, forest fragmentation negatively impacts the long term sustainability of both plant and animal communities. Geographic isolation results in inbreeding and diminishes biodiversity." Zimmerman, E.A. and P.F. Wilbur "A Forest Divided" New Roxbury Land Trust newsletter, 2004 http://www.ourbetternature.org/forestfrag.htm	The Middle Fork Weiser River project area has been heavily managed in the past. See FEIS Appendix D for a list of past activities in the project area, including harvest, thinning, wildfire, grazing and roads. Outside of the IRA, the project area does not contain what could be considered large contiguous blocks of unmanaged habitat. Additionally, the project proposes to reduce road density in the analysis area, which would contribute to restoring larger blocks of habitat. The effects of using roads for haul routes, road maintenance, construction of temporary roads, and decommissioning of roads are discussed under each resource section in FEIS Chapter 3.

#	Citation	Forest Service Response
3.118	**Attachment 11 - Dr. Cohen's opposing view #1 -** "Research results indicate that the home and its immediate surroundings within 100-200 feet (30-60 meters) principally determines the home ignition potential during severe wildland-urban fires. Research has also established that fire is an intrinsic ecological process of nearly all North American ecosystems. Together, this understanding forms the basis for a compelling argument for a different approach to addressing the wildland-urban fire problem." (Pg. 1 – abstract) **Source:** *Wildland-Urban Fire—A different approach* http://www.nps.gov/fire/download/pub_pub_wildlandurbanfire.pdf	Homeowners' creating defensible space around their homes is very beneficial. Cohen's paper (2000) says ignitability of a house is due primarily to radiant heat from fuel burning nearby and firebrands igniting the building materials used in the structure. The commenter cites sources refuting the effectiveness of fuel reduction treatments outside areas immediately adjacent to structures. The Middle Fork Weiser River project proposes the creation of shaded fuel breaks along main FS road for fire safety ingress/egress for fire fighters and the public. The Adams County WUI boundary includes areas within the project area to protect values at risk immediately adjacent. There are no homes within the project area. Just over the ridge is the adjacent Tamarack residential area and there are also homes along the Middle Fork Weiser River downstream of the project area. The Structure Ignition Assessment Model (SIAM) developed by Cohen (1995) and results from the International Crown Fire Modeling Experiment (Alexander et al. 1998) generally concur that a flaming front at a distance of 40 meters (approximately 120 feet) or more from structure does not deliver sufficient heat energy to ignite the exterior of a home. However, lofted firebrands are also a principle ignition factor. Highly ignitable homes can ignite during wildland fire without a fire spreading near the structure. This occurs when firebrands are lofted downwind from fires. The firebrands subsequently collect on and ignite flammable home materials (such as roofs) and adjacent flammables (such as woodpiles, decking, and landscaped vegetation). Firebrands that result in ignitions can originate from wildland fires that are a distance of one kilometer (0.6 miles) or more (Cohen, 2000).

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		Reducing surface fuel amounts through prescribed fire and mechanical means reduces the risk that the overstory would ignite in a wildfire (Graham et al., 2004). Understory density and ladder fuels would be reduced through slashing or precommercial thinning where necessary to facilitate prescribed burning and protect the overstory from crowning. Mechanical fuel treatments followed by prescribed burning has shown to reduce fire severity over no treatment or prescribed burning alone (Pollet and Omi, 2002). Reducing the potential for crown fire in adjacent fuels may prevent firebrand transport into the adjacent WUI areas. The value of manipulating fuels around structures to provide a margin of safety is an accepted practice and is the responsibility of individual homeowners. Consistent with Cohen (2000), current and ongoing efforts are in place through the Adams Country Fire Mitigation Program to help homeowners with fuel reduction activities on their property.
3.119	**Attachment 11 - Dr. Cohen's opposing view #2 - #9 -** "A senior physicist at the Stanford Research Institute, C.P. Butler (1974), coined the term "urban-wildland interface" and described this fire problem as follows: "In its simplest terms, the fire interface is any point where the fuel feeding a wildfire changes from natural (wildland) fuel to man-made (urban) fuel." (Pg. 1) "The results of the diverse analytical methods are congruent and consistently indicate that ignitions from flames occur over relatively short distances--tens of meters not hundreds of meters. The severe-case estimate of SIAM indicates distances of 40 meters or less. Experimental wood walls did not ignite at 10 meters when exposed to experimental crown fires. And, case studies found that vegetation clearance of at least 10 meters was associated with a high occurrence of home survival." (Pg. 4) Analyses of southern California home losses done by the Stanford Research Institute for the 1961 Belair-Brentwood Fire (Howard and others 1973) and by the University of California, Berkeley, for the 1990 Painted Cave Fire (Foote and Gilless 1996) are consistent with	The above-cited research exclusively addresses home ignitability. Not addressed in the research are some of the other issues and problems faced by resource managers, fire professionals, and residents when considering fire in the WUI. When a fire enters the WUI, there remains the potential for loss of life, property, and other values even if homes have been made fire safe. While Adams County has an active fire mitigation program, not addressed above is the uncertainty regarding the number of property owners who take the responsibility, or who have the funds available, to reduce the ignitibility of their homes and maintain that condition. Also, not addressed is the potential loss of private forests, vehicles, domestic animals, and infrastructure (e.g., roads, utility lines, water supplies, etc.). Simply reducing home ignitability ignores the cost to private and public entities when these values are damaged or destroyed in a wildfire event. It also ignores other intangible assets that communities value such as scenery, water quality, and a sense of place. Many homeowners would likely find it undesirable to live in an intensely or severely burned-over forest even if their

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	SIAM estimates and the experimental crown fire data. Given nonflammable roofs, Stanford Research Institute (Howard and others 1973) found a 95 percent survival with a clearance of 10 to 18 meters and Foote and Gilless (1996) at Berkeley, found 86 percent home survival with a clearance of 10 meters or more." (Pgs. 3 and 4) "Extensive wildland vegetation management does not effectively change home ignitability." (Pg. 5) "Home ignitability also dictates that effective mitigating actions focus on the home and its immediate surroundings rather than on extensive wildland fuel management. Because homeowners typically assert their authority for the home and its immediate surroundings, the responsibility for effectively reducing home ignitability can only reside with the property owner rather than wildland agencies." (Pg. 5) "As stated, the evidence indicates that home ignitions depend on the home materials and design and only those flammables within a few tens of meters of the home (home ignitability). The wildland fuel characteristics beyond the home site have little if any significance to WUI home fire losses." (Pg. 5) "Home ignitability implies that homeowners have the ultimate responsibility for WUI home fire loss potential. As shown, the ignition and flammability characteristics of a structure and its immediate surroundings determine the home fire loss potential. Thus, the home should not be considered a victim of wildland fire, but rather a potential participant in the continuation of the wildland fire. Home ignitability, i.e., the potential for WUI home fire loss, is the homeowner's choice and responsibility." (Pg. 5) "However, public and management perceptions may impede homeowners from taking principal responsibility. For example, the Federal Wildland Fire Management, Policy and Program Review (1995) observes, 'There is a widespread misconception by elected officials, agency managers, and the public that wildland/urban interface protection is solely a fire service concern.' In a Journal of Forestry article, Beebe and Omi (1993) concur, stating that, 'Public reaction to wildfire suggests that many Americans want competent professionals to manage fire flawlessly, reducing the risks to life, property, and public lands to nil.' These statements agree with Bradshaw's (1988) description of the societal roles in the WUI	home has survived the passage of fire. Not only are aesthetic values decreased for most people, but the economic consequences can be devastating, and the risks associated with the after-effects of wildfire events (e.g. mud slides) can put homes, and potentially lives, at risk. Furthermore, the WUI is not solely a local or county fire service concern. Federal and State fire personnel focus their efforts on the wildland environment and have access to both rotor and fixed wing fire retardant equipment, while rural department personnel assess structure protection and suppression. The district, rural department, and state fire personnel are often engaged in mutual aid fire events within the WUI.

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	problem. He observes that homeowners expect that fire protection will be provided by others. Contrary to these expectations for fire protection, the fire services have neither the resources for effectively protecting highly ignitable homes during severe WUI fires, nor the authority to reduce home ignitability." (Pg. 6) **Source:** Reducing the Wildland Fire Threat to Homes: Where and How Much? Presented as the Fire Economics Symposium in San Diego, California on April 12, 1999. http://www.fs.fed.us/rm/pubs_other/rmrs_1999_cohen_j001.pdf	
3.120	**Attachment 11 - Dr. Cohen's opposing view #10 -** "Vegetation management beyond the structure's immediate vicinity has little effect on structure ignitions. That is, vegetation management adjacent to the structure would prevent ignitions from flame exposure; but vegetation management away from the structure would not affect ignition from flame exposure and would not significantly reduce ignitions from firebrands." (Pg. 4) "Past reports and recommendations as well as experimental research and modeling suggest that W-UI fire-loss mitigation should concentrate on the residence and its immediate surroundings. Any strategy for effectively reducing the W-UI fire problem must initially focus on residential fire resistance." (Pg. 5 – Conclusion) "Instead of all fire protection responsibilities residing with fire agencies, homeowners take responsibility for assuring firewise conditions and the initial fire defense of their residences during wildland fires. The fire agencies become a community partner that provides information, coordinates and assists in meeting firewise requirements, and provides fire suppression assistance." (Pg. 5) Structure Ignition Assessment can Help Reduce Fire Damages in the WUI. Published in *Fire Management Notes*, Volume 57 No. 4, 1997 http://www.fs.fed.us/rm/pubs_other/rmrs_1997_cohen_j001.pdf	See responses to Opposing View #1 and Opposing Views #2-9 above.
3.121	**Attachment 11 - Dr. Cohen's opposing view #13 -** "My examination suggests that the abundance and ubiquity of pine needles, dead	Focusing on the home ignition's zone pine needles, dead leaves, cured vegetation, flammable shrubs, wood piles, etc. adjacent to,

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	leaves, cured vegetation, flammable shrubs, wood piles, etc. adjacent to, touching and or covering the homes principally contributed to the residential losses." (Pg. 4) **Source:** *Examination of the Home Destruction in Los Alamos Associated with the Cerro Grande Fire July 10, 2000* Source: USDA Forest Service, Rocky Mountain Research Station, Missoula, Montana, 2000. http://www.fusee.org/docs/Preparedness/Cohen_examlosalamos%20copy.pdf	touching and or covering the homes is essential; however, lofted firebrands from adjacent forest fuels are also a principle ignition factor. Highly ignitable homes can ignite during wildland fire without a fire spreading near the structure. This occurs when firebrands are lofted downwind from fires. The firebrands subsequently collect on and ignite flammable home materials (such as roofs) and adjacent flammables (such as woodpiles, decking, and landscaped vegetation). Firebrands that result in ignitions can originate from wildland fires that are a distance of one kilometer (0.6 miles) or more (Cohen, 2000.) Refer to the response for Opposing View #1 for further discussion on firebrands and how treatments outside the Home Ignition Zone can help reduce this risk.
3.122	**Attachment 11 - Dr. Cohen's opposing view #14 -** "The wildland fire management approach for preventing WUI fire disasters largely addresses the wildfire outside the home ignition zone rather than a home's ignition potential as determined by the conditions within the home ignition zone. Since 2000, agency fire management policy initiatives have emphasized fire suppression." (Pg. 24) "Preventing WUI fire disasters requires that the problem be framed in terms of home ignition potential. Because this principally involves the home ignition zone, and the home ignition zone primarily falls within private ownership, the responsibility for preventing home ignitions largely falls within the authority of the property owner. Preventing wildfire disasters thus means fire agencies helping property owners mitigate the vulnerability of their structures. The continued fire management focus on fire suppression suggests the WUI fire problem persists largely as a consequence of framing the WUI fire problem primarily in terms of the fire exclusion paradigm." (Pg. 25) The continued focus on fire suppression largely to the exclusion of alternatives that address home ignition potential suggests a persistent inappropriate framing of the WUI fire problem in terms of the fire exclusion paradigm." (Pg. 25)	Agency fire management policy has changed over the years and is now accepting of utilizing natural ignitions for multiple resource benefit, as evidenced by recently developed national strategies. The National Cohesive Wildland Fire Management Strategy (referred to as Cohesive Strategy henceforth) and National Fire Plan (NFP) provide broad guidance for project development. The Cohesive Strategy was a report developed for Congress by the Departments of Interior and Agriculture as required by the Federal Land Assistance, Management and Enhancement Act of 2009 (FLAME Act). The Cohesive Strategy is a foundational document that articulates the shared vision and national goals for the future of fire management: restoring and maintaining resilient landscapes, creating fire-adapted communities and improving wildfire response. The NFP was developed in 2000 following a landmark wildland fire season. The NFP addresses five key points (Firefighting, Rehabilitation, Hazardous Fuels Reduction, Community Assistance, and Accountability) and continues to provide technical, financial and resource guidance and support for wildland fire management across the nation.

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	The Wildland-Urban Interface Fire Problem: A Consequence of the Fire Exclusion Paradigm. Published in *Forest History Today*, Fall 2008 http://www.foresthistory.org/Publications/FHT/FHTFall2008/Cohen.pdf	
3.123	**Attachment 11 - Dr. Cohen's opposing view #17 - #18 -** "For the same reason, mitigating home ignition potential during extreme wildland fires must focus activities within and immediate to the residential area, i.e. the home ignition zone. But the home ignition zone largely corresponds to private property. Thus, with minor exception, the authority for effectively reducing the home ignition potential belongs to homeowners. Public land management agencies can facilitate homeowner mitigations and these agencies may be able to reduce fire intensities and the extent of burning around communities. But these agencies cannot accomplish the necessary and sufficient actions necessary to prevent residential fire disasters during extreme fire conditions by treating beyond the home ignition zone." (Pg. 2) **Source:** *Thoughts on the Wildland-Urban Interface Fire Problem*, June 2003 http://www.nps.gov/fire/download/pub_pub_wildurbaninterface.pdf "A home with its immediate surroundings (about 100-150 feet from the structure) is called the Home Ignition Zone. Many factors about the HIZ determine the potential for ignition during a wildland fire, such as flammable wood roofs and materials like trees, grass, decks, or adjacent structures leading up to a home." (Pg. 1) **Source:** Saving Homes from Wildfires: Regulating the Home Ignition Zone Published in *Zoning News,* May 2001 http://www.battle-creek.net/docs/fire/Zoning.pdf	See responses to Opposing View #1 and Opposing Views #2-9 above.

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	Attachment 11 - Dr. Cohen's opposing view #19 - #28"SIAM calculations indicate that large wildland flame fronts (e.g., forest crown fires) will not result in piloted wood ignitions (e.g., the typical variety of exterior wood walls) at distances greater than 40 meters (Cohen and Butler [In press])." (Pg. 4) **"**Field studies conducted during the International Crown Fire Modeling Experiment (Alexander et al. 1998) provided measured data for comparisons with SIAM model estimates. Total heat transfer (radiation and convection) and ignition data were obtained from heat flux sensors placed in wooden wall sections. The instrumented walls were located on flat, cleared terrain at 10, 20, and 30 meters downwind from the edge of the forested plots. The forest was variably composed of an overstory of jack pine (Pinus banksiana) about 13 meters high with an understory of black spruce (Picea mariana). The spreading crown fire produced flames approximately 20 meters high." (Pg. 5) "Five burns were conducted where wall sections were exposed to a spreading crown fire. As the crown fires reached the downwind edge of the plot, turbulent flames extended into the clearing beyond the forest edge. In two of the five burns, flames extended beyond 10 meters to make contact with the wall section placed at 10 meters from the forest edge. When flame contact occurred, the walls ignited; however, without flame contact, only scorch occurred. The wooden panels at 20 and 30 meters never ignited and the panel at 30 meters never scorched." (Pg. 6) "Case studies of actual W-UI fires provide an independent comparison with SIAM and the crown fire experiments. The actual fires incorporate a wide range of fire exposures. The case studies chosen examine significant factors related to home survival for two fires that destroyed hundreds of homes. The Bel Air fire resulted in 484 homes destroyed (Howard et al. 1973) and the Painted Cave fire destroyed 479 homes (Foote 1994). Analyses of both fires indicate that home ignitions depend on the characteristics of a home and its immediate surroundings. Howard et al. (1973) observed 95 percent survival for homes with nonflammable roofs and a vegetation clearance of 10 to 18 meters. Foote (1994) observed 86 percent	The field studies mentioned in the International Crown Fire Modeling Experiment (Alexander et al. 1998) focused in a jack pine habitat, whereas the adjacent fuels in the Middle Fork Weiser River project are mix of Douglas-fir, grand fir, Western larch, and ponderosa pine. Lofted firebrands are a principle ignition factor. Highly ignitable homes can ignite during wildland fire without a fire spreading near the structure. This occurs when firebrands are lofted downwind from fires. The firebrands subsequently collect on and ignite flammable home materials (such as roofs) and adjacent flammables (such as woodpiles, decking, and landscaped vegetation). Firebrands that result in ignitions can originate from wildland fires that are a distance of one kilometer (0.6 miles) or more (Cohen, 2000.) A homeowner that has the means to create defensible space around their home may experience results as cited above where flame contact may never occur to their home. However, if no defensible space is created the tests showed that flame contact created home ignition. This is a model run for inside the home ignition zone known as the Structure Ignition Assessment Model (SIAM) developed by Cohen (Cohen 1995) and results from the International Crown Fire Modeling Experiment (Alexander et al. 1998) generally concur that a flaming front at a distance of 40 meters (approximately 120 feet) or more from structure does not deliver sufficient heat energy to ignite the exterior of a home. Also see responses to Opposing View #1 and Opposing Views #2-9 above.

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	survival for homes with nonflammable roofs and a clearance of 10 meters or more." (Pg. 7) "The high survival rate for homes with nonflammable roofs and 10-20 meter vegetation clearances included firebrands as an ignition factor, thus indicating that firebrand ignitions also depend on the ignition characteristics of the home and the adjacent flammable materials." (Pg. 8) "Wildland fuel reduction beyond the home ignition zone does not necessarily change home ignitability; therefore, wildland fuel reduction does not necessarily mitigate the W-UI fire loss problem." (Pg. 9) **"**Effective landscape fuel reduction does not necessarily prevent W-UI home fire destruction." (Pg. 10) "Fire losses depend on home ignitions and home ignitions depend on home ignitability. Thus, home ignitability, being limited to a home and its immediate surroundings, offers us the opportunity to separate the W-UI structure fire loss problem from other landscape-scale fire management issues. This conclusion has significant implications for the actions and responsibilities of homeowners and fire agencies, such as identifying and mapping the potential for W-UI residential fire destruction, identifying appropriate and effective mitigating actions, and determining who should take responsibility for home ignitability." (Pg. 10) "Thus, wildland fuel reduction that is effective for reducing the wildland fire intensity might be insufficient for reducing the destruction of highly ignitable homes. In contrast, a low home ignition potential reduces the chances of fire destruction without extensive wildland fuel reduction. These findings indicate that the W-UI home fire loss problem is a home ignitability issue largely independent of landscape fuel reduction issues." (Pg. 10) "The extent of the home ignition zone corresponds more to specific home and community ownership than to the landscapes of federal, state and local land management agencies. This suggests a corresponding responsibility for W-UI home fire loss potential residing with homeowners and communities. Thus, the home should not be considered a victim of wildland fire, but rather a potential participant in the continuation of the wildland fire. Home ignitability, i.e., the	

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	potential for W-UI home fire loss, is a homeowner and community choice and responsibility." (Pg. 11) What is the Wildland Fire Threat to Homes? Presented as the Thompson Memorial Lecture, April 10, 2000 http://www.nps.gov/fire/download/pub_pub_wildlandfirethreat.pdf	
3.124	**Attachment 11 - Dr. Cohen's opposing view #29 -** "Model results indicate that ignitions from flame radiation are unlikely to occur from burning vegetation beyond 40 meters of a structure. Thinning vegetation within 40 meters has a significant ignition mitigation effect." (Pg. 81) "Vegetation management to prevent ignitions from radiation does not require extensive vegetation removal hundreds of meters from a structure. Our analysis indicated that 40 meters was sufficient for a 20 meter flame height." (Pg. 86 – Conclusions) **Source:** Modeling Potential Structure Ignitions from Flame Radiation Exposure with Implications for Wildland/Urban Interface Fire Management Presented at the 13th Fire and Forest Meteorology Conference. Lorne, Australia, 1996 http://www.firewise.org/resources/files/WUI_HIR/Modelingpotentialignitions.pdf	See responses to Opposing Views #1, 2-9 and 19-28 above.
3.125	**Attachment 11 - Dr. Cohen's opposing view #31 - #37 -** "Miracles aside, the characteristics of the surviving home and its immediate surroundings greatly influenced its survival." (Pg. 15) "Based on severe-case assumptions of flame radiation and exposure time, SIAM calculations indicate that wild-land flame fronts comparable to crowning and torching trees (flames 20 meters high and 50 meters wide) will not ignite wood surfaces at distances greater than 40 meters (Cohen and Butler, in press). Figure 2 shows the radiant heat a wall would receive from flames depending on its distance from the fire. The incident radiant heat flux, defined as the	The SIAM calculation of wildland flame front is based upon flame radiation and exposure time. It is not basing its statistical analysis upon convection and transport of firebrands. The importance of treating adjacent fuels is evident when analyzing the Structure Ignition Assessment Model (SIAM) developed by Cohen (Cohen 1995) and results from the International Crown Fire Modeling Experiment which showed that lofted firebrands can land on highly ignitable homes and ignite during wildland fire without a fire spreading near the structure. This occurs when firebrands are lofted downwind from fires. The firebrands subsequently collect on and ignite flammable home materials (such as roofs) and adjacent

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	rate of radiant energy per unit area received at an exposed surface, decreases as the distance increases." (Pg. 17) "Analyses of both fires indicate that home ignitions depend on the characteristics of a structure and its immediate surroundings. Howard et al. (1973) observed 86 percent survival for homes with nonflammable roofs and a clearance of 10 meters or more." (Pg. 19) "Using the model results as guidance with the concurrence of experiments and case studies, we can conclude that home ignitions are not likely unless flames and firebrand ignitions occur within 40 meters of the structure. This finding indicates that the spatial scale determining home ignitions corresponds more to specific home and community sites than to the landscape scales of wildland fire management. Thus, the W-UI fire loss problem primarily depends on the home and its immediate site." (Pg.20) "Thus, the W-UI fire loss problem can be defined as a home ignitability issue largely independent of wildland fuel management issues. This conclusion has significant implications for the actions and responsibilities of homeowners and fire agencies, such as defining and locating potential W-UI fire problems (for example, hazard assessment and mapping), identifying appropriate mitigating actions, and determining who must take responsibility for home ignitability." (Pg.20) "The W-UI fire case studies indicated approximately 90 percent survival with a vegetation clearance on the order of 10 to 20 meters for homes with nonflammable roofs. Thus, the case studies support the general flame-to-structure distance range of 10 to 40 meters as found through modeling and experiments." (Pg.20) "A change needs to take place in the relationship between homeowners and the fire services. Instead of home-related presuppression and fire protection responsibilities residing solely with fire agencies, homeowners must take the principal responsibility for ensuring adequately low home ignitability." (Pg.21) Preventing Disaster Home ignitability in the Wildland-Urban Interface. Published in the Journal of Forestry 98(3): 15-21, 2000 http://www.nps.gov/fire/download/pub_pub_preventingdisaster.pdf	flammables (such as woodpiles, decking, and landscaped vegetation). Firebrands that result in ignitions can originate from wildland fires that are a distance of one kilometer (0.6 miles) or more (Cohen, 2000.) Thus, showing that adjacent fuels of up to .6 miles in distance can still ignite homes. Also see responses to Opposing Views #1, 2-9 and 19-28 above.

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3.126	**<u>Attachment 11 - Dr. Cohen's opposing view #38 - #50 -</u>** "Many scientists and natural resource agencies suggest extensive fuel treatments to reduce the possibility of severe and intense wildfires that could damage ecosystems, destroy property, and take human life (USDA Forest Service, 2000; GAO, 2003a, b). However, there are a number of misconceptions and misunderstandings about fuel treatments and their use as a panacea for fire hazard reduction across the United States (Finney and Cohen, 2003; Franklin and Agee, 2003)." (Pg.1998) "Given the right conditions, wildlands will inevitably burn. It is a misconception to think that treating fuels can ''fire-proof'' important areas. It would be virtually impossible to exclude fire from most temperate terrestrial ecosystems because ignition sources are prevalent and fuels cannot be eliminated. Ignition is rarely affected by fuel treatment." (Pg.1998) "Treating fuels to facilitate suppression is an example in circular logic. If fuel treatment makes suppression more successful in general, then less area will be burned in the short run and more acreage will tend to burn under extreme conditions, when suppression is ineffective. The inevitable result is that more area is burned in fewer, more unmanageable events with greater consequences. In addition, fire suppression leads to continued fuel accumulation and, in turn, more difficult conditions for suppression. This phenomenon has been described as ''the wildland fire paradox'' (Brown and Arno, 1991). Rather than creating conditions where fire is easier to suppress, fuel treatments should strive to create conditions where fire can occur without the need for suppression." (Pg.1998) "Bessie and Johnson (1995) show weather (fuel moisture and wind) is far more important than fuels in determining fire behavior; reducing fuels may have a limited impact on fire occurrence." (Pg.1999) "Treating fuels to reduce fire occurrence, fire size, or amount of burned area is ultimately both futile and counter-productive." (Pg.1999) "Since the home ignition zone largely occurs on private lands, most land management agencies do not have the authority to mitigate the WUI ignition potential directly (Cohen, 2000b). However, the opportunity exists to explicitly define responsibilities for the WUI fire	See the response to Opposing Views #14-16 above. During the onset of a fire event the Wildland Fire Decision Support System (WFDSS) process is completed which drives the course of action costs for a fire event whether it is full suppression or multiple resource objectives is analyzed and documented for future economic review. The location of values at risk often dictates whether suppression is the course of action to take. The wildland-urban interface is continually expanding requiring fire protection either from federal, state, or rural fire departments. Policy across these agencies varies and often does not allow for multiple resource fire events. By reducing hazardous fuels, ladder fuels, and surface fuel loadings in multistoried mixed conifer stands, these treatments would aid in reducing wildfire hazard over the long term by rendering stands more resilient to natural fire occurrence and disturbances. The provided comment that the only way to reduce suppression expenditures is to make a decision to spend less money on suppressing fires is not implementable in all situations based upon values at risk and fire jurisdictions.

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	potential (i.e. the home ignition zone) consistent with areas of jurisdiction and separately from ecological wildfire issues." (Pg.1999) "It may not be necessary or effective to treat fuels in adjacent areas in order to suppress fires before they reach homes; rather, it is the treatment of the fuels immediately proximate to the residences, and the degree to which the residential structures themselves can ignite that determine if the residences are vulnerable." (Pg.1999) "WUI fuel treatments can be designed such that an extreme wildfire can occur in the WUI without having a residential fire disaster. Although general wildfire control efforts may not benefit from fuel treatments during extreme fire behavior, fuel modifications can significantly change outcome of a wildfire within a treatment area. Research has shown that a home's characteristics and its immediate surroundings principally determine the WUI ignition potential during extreme wildfire behavior (Cohen, 2000a, c, 2003, 2004). The area that primarily determines WUI ignition potential is called the home ignition zone (Cohen, 2001). WUI fuel treatments can address the home ignition zone by removing flammable materials immediately adjacent to residences." (Pg. 1999) "Treating fuels may not reduce suppression expenditures. It is a natural mistake to assume that a successful fuel treatment program will result in reduced suppression expenditures. Suppression expenditures rarely depend directly on fuel conditions, but rather on fire location and on what resources are allocated to suppression. The only certain way to reduce suppression expenditures is to make a decision to spend less money suppressing fires." (Pg. 2000) "Thinning to reduce crown fire potential requires careful evaluation of the tradeoffs in treatment effects on potential surface fire behavior and crown fire behavior (Scott and Reinhardt, 2001). Thinning will often result in increased potential surface fire behavior, for several reasons. First, thinning reduces the moderating effects of the canopy on windspeed, so surface windspeed will increase (Graham et al., 2004). It also results in increased solar radiation on the forest floor, causing drier surface fuels. It may also cause an increase in flammable grassy and shrub fuels over time, due to the reduced tree competition." (Pg.2000)	

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	"Some viable fuel treatments may actually result in an increased rate of spread under many conditions (Lertzman et al., 1998; Agee et al., 2000). For example, thinning to reduce crown fire potential can result in surface litter becoming drier and more exposed to wind. It can also result in increased growth of grasses and understory shrubs which can foster a rapidly moving surface fire." (Pg.2000) "Treating fuels may not improve ecosystem health. Ecosystem restoration treatment and fuel treatment are not synonymous. Some ecosystem restoration treatments reduce fuel hazard, but not all fuel treatments restore ecosystems. Ecosystem restoration treatments are often designed to recreate presettlement fire regimes, stand structures and species compositions while fuel treatment objectives are primarily to reduce fuels to lessen fire behavior or severity—this is known as ''hazard Reduction.'' Achieving fuel hazard reduction goals in the absence of ecosystem restoration is insufficient (Dombeck et al., 2004; Kauffman, 2004)." (Pg.2000) "Conversely, some fuel treatments can reduce fuels but create stands that are quite dissimilar from their historical analogs. Examples include mastication treatments that break, chip, or grind canopy and surface woody material into a compressed fuelbed and thinning treatments that remove the fire adapted species and leave shade-tolerant, late successional species." (Pg.2000) Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States. Published in Forest Ecology and Management 256, 2008 http://www.firewise.org/Information/Research-and-Guidance/WUI-Home-Ignition-Research/~/media/Firewise/Files/Pdfs/Research/CohenFuelTreatment.pdf	