Two part process.

A. **Part One**. The first 5 inputs were created and combined together as these are all the same for every alternative. Only need to complete once (and once for full meets A19 of Alt.A).

Input 1. Lands unsuitable due to legal restrictions. Wilderness, WSR-Wild, IRA, RNA, Jewel Basin.

- Created by UNION stand-alone GIS layers: wilderness, WSR (reselected off Wild river section only), IRA, RNA and Jewel Basin (reselected off Special Area GIS layer). And the buffered geographic areas, which ensures that all areas will have a value assigned.
- Add and attributed LandProhibitedDescription and dissolved on attribute. 1225 polygons.

Input 2 – existing A19. Developed Non-Forest lands. Buffered roads and administrative sites.

- Created by pulling administrative sites (MA3A) from Alt.B MgmtArea layer dated 2015Jun30. And selecting off existing roads from the Roads2014jan2 layer, buffering roads 33ft (total width), which is 16.5 feet (5.0292 meters) either side. Two individual layers were UNION along with buffered geographic areas.
- Add and attributed DevelopedNonForestDescription and dissolved on attribute. 1308 polygons.

Input 2 – fully meets A19. Developed Non-Forest lands. Buffered roads and administrative sites.

- Used **ONLY** for Alt.A to show what the land management would be if A19 fully met. Input1, InputALL1, timber suitability and spectrum feature classes will have "**full**" in their names.
- Created by pulling administrative sites (MA3A) from Alt.B MgmtArea layer dated 2015Jun30. And selecting off existing roads from the Roads2014jan2 layer from the A19 fully meets field, buffering roads 33ft (total width), which is 16.5 feet (5.0292 meters) either side. Two individual layers were UNION along with buffered geographic areas.
- Add and attributed DevelopedNonForestDescription and dissolved on attribute. 1238 polygons.

Input 3. Non-Forest Lands. Truly non-forested based upon VMAP and PVT

- Created by selecting off the following from VMapBasePVT2013Sept25:
  (domGroup = "Grass/Shrub/SparseVeg" OR domGroup = "Water") OR (PVT = "agricultur" OR PVT = "alpine" OR PVT = "drygrass" OR PVT = "fesida" OR PVT = "fessca" OR PVT = "mesicshrub" OR PVT = "ripdecid" OR PVT = "sage4" OR PVT = "shrub" OR PVT = "snow" OR PVT = "sparseveg" OR PVT = "urban" OR PVT = "water")
- Add and attributed NonForestLandsDescription and dissolved on attribute. 30,572 polygons.

Input 4. Technology or Site Considerations OR Poor tree growth. Specific landtypes and laly/pial PVT)

- Created by selection off the following landtypes from LandTpeIIIandIV layer: 10-2, 10-3, 14-3, 12, 17, 54, 55, 72, and 75. And selecting off the following PVT from VMapBasePVT2013Sept25: laly and pial. Two individual layers were UNION"d along with buffered geographic areas.
- Add and attributed LandNotSuitableTechProdDescription and dissolved on attribute. 3331 polygons.

Input 5. Riparian Habitat Conservation Areas (RHCA). Used existing RHCA

- Created by UNION of RHCA and buffered geographic areas.
- Add and attributed RHCADescription. No dissolving required. 5153 polygons.

COMBINE Inputs 1-5.

- UNION the five inputs, creating GIS layer InputALL1 (or InputALL1full).
- Created attribute SuitabilityCallDescription and attributed as follows, and **IN ORDER**:
    1. If SuitabilityCallDescription is blank and LandProhibitedDescription is Wilderness, WSR-Wild, RNA or Jewel, then attribute "Unsuitable. Prohibited legal,withdrawn,statute"
    2. If SuitabilityCallDescription is blank and DevelopedNonForestDescription is Developed Non-Forest, then attribute "Unsuitable. Developed Non-Forest (admin,roads)"
    3. If SuitabilityCallDescription is blank and NonForestDescription is Non-Forest land, then attribute "Unsuitable. Non-Forest (vegetation,water)"
    4. If SuitabilityCallDescription is blank and LandNotSuitableTechProdDescription is tech-site or growth-prod, then attribute "Unsuitable. Tech-Site/Growth (lndtyp,laly,pial)"
    5. If SuitabilityCallDescription is blank and LandProhibitedDescription is IRA and RHCADescription is RHCA, then attribute "Unsuitable. IRA-RHCA"
    6. If SuitabilityCallDescription is blank and RHCADescription is RHCA, then attribute "Unsuitable. RHCA"
    7. If SuitabilityCallDescription is blank and LandProhibitedDescription is IRA, then attribute "Unsuitable. IRA"

- Created attribute MgmtAreaGroup for assigning MAG level for Spectrum. Attributed as follows:
    1. If SuitabilityCallDescription is "Unsuitable. Prohibited legal,withdrawn,statute", then attribute "MAG1"
    2. If SuitabilityCallDescription is "Unsuitable. Developed Non-Forest (admin,roads)", then attribute "MAG1"
    3. If SuitabilityCallDescription is "Unsuitable. Non-Forest (vegetation,water)", then attribute "MAG1"
    4. If SuitabilityCallDescription is "Unsuitable. Tech-Site/Growth (lndtyp,laly,pial)", then attribute "MAG1"
    5. If SuitabilityCallDescription is "Unsuitable. IRA-RHCA" or "Unsuitable. RHCA", the MgmtAreaGroup will be assigned after combining with each alternative management area GIS layers.
    6. If SuitabilityCallDescription is "Unsuitable. IRA", the MgmtAreaGroup will be assigned after combining with each alternative management area GIS layers.

B. **Part Two**. The Part One output will be then combined with the individual alternative Mgmt Areas for the final attributing, thus creating the Suitable/Unsuitable input for the Spectrum model.

Combine (UNION) the GIS layer InputALL1 (or InputALLFully1 for the second Alt. A output) with each alternative's individual MgmtArea GIS layer.
Make sure the box for Gaps Allowed is not checked.

For Alt. A, there are two outputs, 1) where the road management is existing per A19, output is TimberSuitAltA86MAex2<yyyyMondd); and 2) where the road management fully meets the A19 open & total route density and security CORE, output is TimberSuitAltA86full<yyyMondd). Additionally, the 1986 forest plan recommended wilderness will also need to be combined in for both outputs as the 1986 Management Areas did not include these recommended areas. The 1986 recommended wilderness areas should all be MAG1.

Alt.A. 1986 Management Areas. Output is: TimberSuitAltA86MAex2015Oct1 (or TimberSuitAltA86MAfull2015Oct2). Assign value **IN ORDER**:

- If MA_CODE is "nonFS", regardless of other values, then attribute both SuitabilityCallDescription and MgmtAreaGroup as "nonFS"
- If MA_CODE is "water", regardless of other values, then attribute both SuitabilityCallDescription and MgmtAreaGroup as "nonFS"
- If MA_CODE is blank, check to make sure it's the boundary area. If so, then attribute "outside area" for SuitabilityCallDescription and "nonFS" for MgmtAreaGroup
- If Addition_Name is not blank (i.e. a 1986 recommended wilderness) and MgmtAreaGroup is not "nonFS", attribute as follows:
    - MgmtAreaGroup should be either blank or "MAG1". Attribute MgmtAreaGroup as "MAG1".
    - Where SuitabilityCallDescription is blank, attribute SuitabilityCallDescription as "Unsuitable. '86 Recommended Wilderness" Otherwise leave SuitabilityCallDescription as currently attributed.
    - For each value in MA_CODE, put "RW" before the MA value, e.g. "RW2, "RW15A" (expression is: "RW" & [MA_CODE])
    - For each value in CLASSNAME, put " – Recommended Wilderness" after the CLASSNAME value, e.g. "MA16 – Recommended Wilderness" (expression is: [CLASSNAME] & " – Recommended Wilderness")
- If SuitabilityCallDescription is blank and MA_CODE is…
    - If MA unsuitable, it's "Unsuitable. 86 MA <value>"
    - If MA suitable, it's "Suitable. 86 MA <value>"
    - Assign the MgmtAreaGroup where it is blank based upon the individual MA values.
    - **CAUTION**. For each of these selections, the original 1-5 inputs values should read "NOT". If they don't there is a problem, figure it out!
- If SuitabilityCallDescription is "Unsuitable. IRA-RHCA" or "Unsuitable. RHCA" AND MgmtAreaGroup is blank……
    - attribute "MAG1" for those MAs that would be MAG1 (1986 MA: 3A if RNA, 10, 10A, 11B, 14 if RNA, 18 if WSR-Wild, 19, 21, 22)
    - attribute "MAG2" for all other MA values
- If SuitabilityCallDescription is "Unsuitable. IRA" and MgmtAreaGroup is blank, and MA_CODE is…
    - Leave the SuitabilityCallDescription as is.
    - Assign the MgmtAreaGroup based upon the MA_CODE value.
- Check for blank values in SuitabilityCallDescription and MgmtAreaGroup. Figure out why still blank, and correct.
- If layer is OK, DISSOLVE on MgmtAreaGroup to simplify input for Spectrum. Uncheck the Create multipart features (optional) box. Created Level2AltA86ex (or Level2AltA86full) in the Spectrum.gdb

Table for Suitability Calls for the 1986 Forest Plan Revision Management Areas.

1986 MA	Description	1986 Plan Timber Production Suitability	Mgmt Area Group (MAG) - Spectrum
1	Non forest / uneconomical / technologically infeasible	Unsuitable	2
2	Unroaded-Dispersed Rec / Primitive	Unsuitable	2
2A	Unroaded-Dispersed Rec / Semi-Primitive non-motorized	Unsuitable	2
2B	Unroaded-Dispersed Rec / Semi-Primitive Motorized	Unsuitable	2

2C	Unroaded-Dispered Rec / Roaded Natural	Unsuitable	2
3	Non forest / “amenity value resources”	Unsuitable	2
3A	RNAs, Condon Creek Botanical Special Interest Area	Unsuitable	1-RNAs; 2-Condon SIA
4	Developed Rec Sites	Unsuitable	2
5	Roaded timberlands-HighScenic Value / Retention VQO	Suitable	4
7	Roaded timberlands-Visually sensitive / Partial Retention VQO	Suitable	4
8	Unroaded timberlands-HighScenic Value / Partial Retention VQO	Suitable	4
9	Whitetail winter range	Suitable	4
10	Administrative Sites	Unsuitable	1
10A	Condon tree improvement site	Unsuitable	1
11	High quality grizzly bear habitat – Trail Creek	Unsuitable	2
11A	High quality grizzly bear habitat – Bunker Creek	Unsuitable	2
11B	Changed to MA 3A per Amendment 22 – these are RNAs	Unsuitable	1
11C	High quality grizzly bear habitat – lands in southern portion of Swan Lake RD	Suitable	4
12	Riparian area	Unsuitable	2
13	Mule deer / Elk winter habitat	Suitable	4
13A	Mule deer / Elk winter habitat - nonforest	Unsuitable	3
13D	Mule deer / Elk winter habitat – Columbia Mtn / high scenic value	Unsuitable	2
14	Coram Experimental Forest	Unsuitable	1-RNA 2-rest of CEF
15	Roaded timberlands	Suitable	5
15A	Roaded timberlands – sensitive soils (Skyland / Puzzle Creeks)	Suitable	4
15B	Roaded timberlands – Cross country skiing (Essex / Round Meadows aeas)	Suitable	4
15C	Roaded timberlands – Key whitetail deer summer range (Lindbergh Lake)	Suitable	4
15D	Roaded timberlands – visual sensitivity (Island Unit visible from Lake Mary Ronan)	Suitable	4
15E	Roaded timberlands – adjacent to key mule deek / elk winter range (SB River)	Suitable	4
16	Unroaded timberlands	Suitable	4
16A	Unroaded timberlands – sensitive soils and watershed values (Skyland / Puzzle Creeks)	Suitable	4
16B	Unroaded timberlands – high rec values and cross country skiing (Essex)	Suitable	4
16C	Unroaded timberlands – adjacent to key mule deer / elk winter range (SB River)	Suitable	4
17	Riparian areas – narrow in width, mgmt. closely aligned with adjacent MA	Suitable	4
18	Wild and Scenic Rivers	Unsuitable	1-wild 2-rec/scenic
19	Jewel Basin Hiking Area	Unsuitable	1
20	Big Mountain Winter Sports area, Blacktail Ski area	Unsuitable	2
21	Great Bear / Bob Marshall Wilderness Areas	Unsuitable	1
22	Mission Mountains Wilderness	Unsuitable	1

Alt.B. Management Areas. Output is: TimberSuitAltB2015Aug19. Assign value **IN ORDER**:

- If MA_CODE is "notFS", regardless of other values, then attribute both SuitabilityCallDescription and MgmtAreaGroup as "nonFS"
- If MA_CODE is "water", regardless of other values, then attribute both SuitabilityCallDescription and MgmtAreaGroup as "nonFS"
- If MA_CODE is blank, check to make sure it's the boundary area. If so, then attribute "outside area" for SuitabilityCallDescription and "nonFS" for MgmtAreaGroup
- If SuitabilityCallDescription is blank and MA_CODE is…
    - Watch out for Dual MA assignments.
    - If MA unsuitable, it's "Unsuitable. Alt.B MA <value>"
    - If MA suitable, it's "Suitable. Alt.B MA <value>"
    - Assign the MgmtAreaGroup where it is blank based upon the individual MA values.
    - **CAUTION**. For each of these selections, the original 1-5 inputs values should read "NOT". If they don't there is a problem, figure it out!
- If SuitabilityCallDescription is "Unsuitable. IRA-RHCA" or "Unsuitable. RHCA"…….
    - attribute "MAG1" for those MAs that would be MAG1 (current MA: 1a, 1b, 2a and 2b if WSR-Wild, 4a)
    - attribute "MAG2" for all other MA values
- If SuitabilityCallDescription is "Unsuitable. IRA", and MA_CODE is…
    - Watch out for Dual MA assignments.
    - Leave the SuitabilityCallDescription as is.
    - Assign the MgmtAreaGroup based upon the MA_CODE value.
- Check for blank values in SuitabilityCallDescription and MgmtAreaGroup. Figure out why still blank, and correct.
- If layer is OK, DISSOLVE on MgmtAreaGroup to simplify input for Spectrum. Created Level2AltB in the Spectrum.gdb

Alt.C. Management Areas. Output is: TimberSuitAltC2015Aug17. Assign value **IN ORDER**:

- If MA_CODE is "nonFS", regardless of other values, then attribute both SuitabilityCallDescription and MgmtAreaGroup as "nonFS"
- If MA_CODE is "water", regardless of other values, then attribute both SuitabilityCallDescription and MgmtAreaGroup as "nonFS"
- If MA_CODE is blank, check to make sure it's the boundary area. If so, then attribute "outside area" for SuitabilityCallDescription and "nonFS" for MgmtAreaGroup
- If SuitabilityCallDescription is blank and MA_CODE is…
    - Watch out for Dual MA assignments.
    - If MA unsuitable, it's "Unsuitable. Alt.C MA <value>"
    - If MA suitable, it's "Suitable. Alt.C MA <value>"
    - Assign the MgmtAreaGroup where it is blank based upon the individual MA values.
    - **CAUTION**. For each of these selections, the original 1-5 inputs values should read "NOT". If they don't there is a problem, figure it out!
- If SuitabilityCallDescription is "Unsuitable. IRA-RHCA" or "Unsuitable. RHCA"…….
    - attribute "MAG1" for those MAs that would be MAG1 (current MA: 1a, 1b, 2a and 2b if WSR-Wild, 4a)
    - attribute "MAG2" for all other MA values
- If SuitabilityCallDescription is "Unsuitable. IRA", and MA_CODE is…
    - Watch out for Dual MA assignments.
    - Leave the SuitabilityCallDescription as is.

  - Assign the MgmtAreaGroup based upon the MA_CODE value.
- Check for blank values in SuitabilityCallDescription and MgmtAreaGroup. Figure out why still blank, and correct.
- If layer is OK, DISSOLVE on MgmtAreaGroup to simplify input for Spectrum. Created Level2AltC in the Spectrum.gdb

Alt.D. Management Areas. Output is: TimberSuitAltD2015Aug17. Assign value **IN ORDER**:

- If MA_CODE is "notFS", regardless of other values, then attribute both SuitabilityCallDescription and MgmtAreaGroup as "nonFS"
- If MA_CODE is "water", regardless of other values, then attribute both SuitabilityCallDescription and MgmtAreaGroup as "nonFS"
- If MA_CODE is blank, check to make sure it's the boundary area. If so, then attribute "outside area" for SuitabilityCallDescription and "nonFS" for MgmtAreaGroup
- If SuitabilityCallDescription is blank and MA_CODE is…
  - Watch out for Dual MA assignments.
  - If MA unsuitable, it's "Unsuitable. Alt.D MA <value>"
  - If MA suitable, it's "Suitable. Alt.D MA <value>"
  - Assign the MgmtAreaGroup where it is blank based upon the individual MA values.
  - **CAUTION**. For each of these selections, the original 1-5 inputs values should read "NOT". If they don't there is a problem, figure it out!
- If SuitabilityCallDescription is "Unsuitable. IRA-RHCA" or "Unsuitable. RHCA"…….
  - attribute "MAG1" for those MAs that would be MAG1 (current MA: 1a, 1b, 2a and 2b if WSR-Wild, 4a)
  - attribute "MAG2" for all other MA values
- If SuitabilityCallDescription is "Unsuitable. IRA", and MA_CODE is…
  - Watch out for Dual MA assignments.
  - Leave the SuitabilityCallDescription as is.
  - Assign the MgmtAreaGroup based upon the MA_CODE value.
- Check for blank values in SuitabilityCallDescription and MgmtAreaGroup. Figure out why still blank, and correct.
- If layer is OK, DISSOLVE on MgmtAreaGroup to simplify input for Spectrum. Created Level2AltD in the Spectrum.gdb

Table for Suitability Calls based upon Management Area value for Alt B, C, & D.

MA	MAG	Suitability	Description
1a	MAG1	Unsuitable	Wilderness
1b	MAG1	Unsuitable	Recommended wilderness
2a	MAG1	Unsuitable	Designated WSR Wild sections ONLY
2a	MAG2	Unsuitable	Designated WSR Rec/Scenic sections ONLY
2b	MAG1	Unsuitable	Eligible WSR Wild sections ONLY
2b	MAG2	Unsuitable	Eligible WSR Rec/Scenic sections ONLY
3a	MAG2	Unsuitable	
3b	MAG2	Unsuitable	
4a	MAG1	Unsuitable	
4b	MAG2	Unsuitable	Coram EF, outside Coram RNA
4b	MAG5	Suitable	Miller Creek Demonstration Forest

5a	MAG2	Unsuitable	
5b	MAG2	Unsuitable	
5c	MAG2	Unsuitable	
5d	MAG2	Unsuitable	
6a	MAG3	Unsuitable	
6b	MAG4	Suitable	
6c	MAG5	Suitable	
7	MAG4	Suitable	HH Res, except developed campground/day use areas; Cedar Flats Motorized Trails, Nordic Groomed Ski Areas, Krause Basin
7	MAG5	Suitable	Blacktail Wild Bill Trail System; Crane Mountains
7	MAG2	Unsuitable	Developed campground/day use areas in HH Res; HH Track; Whitefish Mountain resort; Blacktail Mountain Ski Area; other developed campground/day use areas.
7	MAG2, MAG3, MAG4, MAG5	Unsuitable	**Alt.D only**. Applied MgmtAreaGroup based upon the MgmtAreaGroup in Alt. B. This applies to the following area names: Camp Misery, east of Big Mtn, Holbrook, Island Unit area, Shepherd Ck area, so Whitefish Divide, sw Tally Lake area,