

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Forestry
Practice Code/Name	654 - Road / Trail / Landing Closure and Treatment
Scenario ID	3
Scenario Name	Road/Trail/Landing Closure and Treatment, >35% hillslope
Scenario Description	The practice includes permanent road/trail/landing closure and treatment, and the hydrologically reconnection of the hillslope to applicable drainage networks. The treatment will limit future access. The typical scenario includes decommissioning a 24-foot wide, earthen road with landings on forest slopes over 35%, using a bulldozer or other heavy equipment such as an excavator or road grader with ripper to re-shape and obliterate the road base and landings in order to re-establish native vegetation. It also includes restoring hydrology with the removal of culverts and drainage fills. Necessary erosion control measures such as water bars are installed. The steep slopes makes this scenario costly due to the increased time needed to apply the measures and the need for additional water control devices. Some hand-work may be necessary to clear the site for the equipment. The work will be supervised by a consultant forester, land manager, or other resource professional. Tree/Shrub Site Prep is not included. However, Tree/Shrub Planting is recommended. When completed, there is no additional maintenance with heavy equipment needed. This practice addresses one or more resource concerns: Excessive sediment in surface waters and Concentrated flow erosion. Since not all
Before Practice Situation	The legacy trail/road is severely affecting wetlands, riparian areas, unstable slopes, water quality, and possibly T&E species. The trail/road can no longer serve its intended use and is incapable of handling needed equipment and traffic. Alternative access was possible. Therefore abandonment and site restoration are the best approaches to address the resource concerns and problems that are being created.
After Practice Situation	The resource concerns are addressed by the abandonment of the road and its drainage elements, and by re-seeding to native grasses.
Scenario Feature Measure	length
Scenario Unit	Foot
Scenario Typical Size	500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$78.00	\$0.16
Equipment/Installation	\$2,777.91	\$5.56
Labor	\$537.78	\$1.08
Mobilization	\$567.48	\$1.13
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$3,961.17	\$7.92

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	185	Crimson Clover (Trifolium incarnatum)	Legumes, Cover Crops and shipping.	Pound	\$2.25	20	\$45.00
Materials	43	Silt Fence	Silt Fence with support post, includes materials, equipment and labor	Foot	\$0.66	50	\$33.00
Equipment/Installation	959	Seeding Operation, Broadcast, Ground	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs.	Acre	\$20.36	1	\$20.36
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$9.93	1	\$9.93
Equipment/Installation	1500	Water Bars	Installation of graded trail water controlling structures such as water bars, broad based dips for erosion control. Typical cross section is 1.5 feet high with 4:1 side slopes yielding about 0.33 CY/ft of length.	Foot	\$1.08	700	\$756.00
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$55.16	8	\$441.28
Equipment/Installation	932	Hydraulic Excavator, 2 CY	Track mounted hydraulic excavator with bucket capacity range of 1.5 to 2.5 CY. Equipment and power unit costs. Labor not included.	Hour	\$156.19	6	\$937.14
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$35.06	6	\$210.36
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	\$5.44	2	\$10.88
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$26.31	8	\$210.48
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$45.37	4	\$181.48
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$21.98	8	\$175.84
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.67	8	\$149.36

Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$35.43	6	\$212.58
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$35.11	4	\$140.44
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$21.77	2	\$43.54
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$173.20	2	\$346.40
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.55	2	\$37.10

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Forestry
Practice Code/Name	654 - Road / Trail / Landing Closure and Treatment
Scenario ID	4
Scenario Name	Road/Trail removal and restoration (Vegetative)
Scenario Description	Minimal re-shaping to natural conditions using light equipment and the establishment of permanent vegetation. This scenario includes using smaller equipment (ag tractor/skidsteer/small dozer/backhoe/) for the installation of water control devices such as water bars and rolling dips, controlling access, and pulling drainages on 500 feet of 12' wide road on 5%-35% hill slopes and little grade. The site is re-vegetated to permanent improved grass and temporarily protected with a thin layer of hay mulch. Soil amendments are applied as per the FOTG guidance. This practice addresses one or more resource concerns: Excessive sediment in surface waters, Wildlife habitat degradation, and Concentrated flow erosion. Since not all segments of the road/trail system may require this level of treatment, this scenario applies only to those segments that are causing the resource concerns.
Before Practice Situation	Legacy trail/road is not necessary and is affecting wetlands, riparian areas, water quality, and possibly T&E species. The trail/road can no longer serve it's intended use and is incapable of handling needed equipment and traffic. Alternative access was possible. Therefore abandonment and site restoration are the best approaches to address the resource concerns and problems that are being created.
After Practice Situation	The re-vegetated, eliminated road addressed the resource concern.
Scenario Feature Measure	length of landing/trail(s)
Scenario Unit	Foot
Scenario Typical Size	500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$214.62	\$0.43
Equipment/Installation	\$263.63	\$0.53
Labor	\$151.26	\$0.30
Mobilization	\$261.16	\$0.52
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$890.67	\$1.78

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	69	Nitrogen (N), Ammonium Nitrate	Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.78	15	\$11.70
Materials	73	Phosphorus, P2O5	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.78	10	\$7.80
Materials	75	Lime, ENM	Fertilizer: Limestone Spread on field.	Ton	\$49.57	1	\$49.57
Materials	74	Potassium, K2O	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.52	10	\$5.20
Materials	1237	Straw	Small grain straw (non organic and certified organic). Materials and shipping only.	Ton	\$120.00	1	\$120.00
Materials	1090	Bahia grass (Paspalum notatum)	Introduced Perennial Grasses and shipping.	Pound	\$4.07	5	\$20.35
Equipment/Installation	1500	Water Bars	Installation of graded trail water controlling structures such as water bars, broad based dips for erosion control. Typical cross section is 1.5 feet high with 4:1 side slopes yielding about 0.33 CY/ft of length.	Foot	\$1.08	100	\$108.00
Equipment/Installation	946	Tillage, Primary	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$15.04	1	\$15.04
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$35.06	1	\$35.06
Equipment/Installation	950	Fertilizer, ground application, dry bulk	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$7.10	1	\$7.10
Equipment/Installation	959	Seeding Operation, Broadcast, Ground	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs.	Acre	\$20.36	1	\$20.36
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	\$28.76	2	\$57.52
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$9.93	1	\$9.93
Equipment/Installation	953	Lime application	Lime application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$10.62	1	\$10.62

Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.62	2	\$39.24
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.67	6	\$112.02
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.43	2	\$38.86
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$92.60	2	\$185.20
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.55	2	\$37.10

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Forestry
Practice Code/Name	654 - Road / Trail / Landing Closure and Treatment
Scenario ID	1
Scenario Name	Road/Trail Abandonment/Rehabilitation (Light)
Scenario Description	Reshaping to natural conditions. This scenario includes using light equipment such as a backhoe for the installation of water control devices such as water bars, rolling dips, controlling access, use of woody residue and pulling drainages on 500 feet of road on 35% hill slopes and a moderate grade. Native vegetation is re-established by seeding. Some light hand work may be needed to clear site for the equipment. The work will be supervised by a consultant forester, land manager, or other resource professional. This practice addresses one or more resource concerns: Excessive sediment in surface waters, Habitat degradation, and Concentrated flow erosion. Since not all segments of the road/trail system may require this level of treatment, this scenario applies only to those segments that are causing the resource concerns.
Before Practice Situation	The legacy trail/roads are severely affecting wetland/riparian areas, slope stability, and water quality. The trail/roads can no longer serve it's intended use and is incapable of handling needed equipment and traffic. Alternative access is possible. Therefore abandonment and rehabilitation is the best way to address the resource concerns and problems that are being created.
After Practice Situation	The resource concerns are addressed by the abandonment of the road and its drainage elements, and by re-seeding to native grasses.
Scenario Feature Measure	length
Scenario Unit	Foot
Scenario Typical Size	500

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$108.00	\$0.22
Equipment/Installation	\$575.17	\$1.15
Labor	\$377.18	\$0.75
Mobilization	\$477.56	\$0.96
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,537.91	\$3.08

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	43	Silt Fence	Silt Fence with support post, includes materials, equipment and labor	Foot	\$0.66	15	\$9.90
Materials	84	Wild Rye, Virginia (Elymus virginicus)	Native Grasses and shipping.	Pound	\$9.81	10	\$98.10
Equipment/Installation	1500	Water Bars	Installation of graded trail water controlling structures such as water bars, broad based dips for erosion control. Typical cross section is 1.5 feet high with 4:1 side slopes yielding about 0.33 CY/ft of length.	Foot	\$1.08	85	\$91.80
Equipment/Installation	926	Backhoe, 80 HP	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$45.37	4	\$181.48
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$35.06	4	\$140.24
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	\$5.44	3	\$16.32
Equipment/Installation	959	Seeding Operation, Broadcast, Ground	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs.	Acre	\$20.36	1	\$20.36
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	\$28.76	4	\$115.04
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$9.93	1	\$9.93
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$35.43	2	\$70.86
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.62	8	\$156.96
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.67	8	\$149.36
Mobilization	1143	Mobilization, Light Equipment Operator	Mobilization of light equipment operators: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$19.43	4	\$77.72

Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$35.11	4	\$140.44
Mobilization	1139	Mobilization, medium equipment	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$92.60	2	\$185.20
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.55	4	\$74.20

Scenario Worksheet

Practice and Scenario Description:	
Information Type	Data
Region	Appalachian
State	North Carolina
Discipline Group	Forestry
Practice Code/Name	654 - Road / Trail / Landing Closure and Treatment
Scenario ID	2
Scenario Name	Road/Trail/Landing Closure and Treatment, <3% hillslope
Scenario Description	<p>The practice includes permanent road/trail/landing closure, treatment, or removal and to hydrologically reconnect the hillslope to applicable drainage networks. The treatment will prohibit future access. The typical scenario includes decommissioning a 500 ft of an 18-foot wide trail/road with a landing on 30% forest slopes, using heavy equipment such as a bulldozer or similar equipment (excavator or road grader with ripper) to re-shape and obliterate the road base and landings in order to re-establish native vegetation. It also includes restoring hydrology with the removal of culverts and drainage fills. Necessary erosion control measures such as water bars are installed. Some hand-work may be necessary to clear the site for the equipment. The work will be supervised by a consultant forester, land manager, or other resource professional. Tree/Shrub Site Prep is not included, however, Tree/Shrub Planting is recommended. When completed, there is no additional maintenance with heavy equipment needed. This practice addresses one or more resource concerns: Excessive sediment in surface waters and Concentrated flow erosion. Since not all segments of the road/trail system may require this level of treatment, this scenario applies only to those segments that are causing the resource concerns.</p>
Before Practice Situation	<p>The legacy trail/road is severely affecting wetlands, riparian areas, slope stability, water quality and possibly T&E species. The trail/road can no longer serve it's intended use and is incapable of handling needed equipment and traffic. Alternative access is possible. Therefore abandonment and site restoration are the best approaches to address the resource concerns and problems that are being created.</p>
After Practice Situation	<p>The resource concerns are addressed by the abandonment of the road and its drainage elements, and by re-seeding to native grasses.</p>
Scenario Feature Measure	length
Scenario Unit	Foot
Scenario Typical Size	500

Cost Summary:		
Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$36.12	\$0.07
Equipment/Installation	\$1,221.72	\$2.44
Labor	\$352.10	\$0.70
Mobilization	\$567.48	\$1.13
Acquisition of Technical Know	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,177.42	\$4.35

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost	Component Justification	Quantity Justification
Materials	43	Silt Fence	Silt Fence with support post, includes materials, equipment and labor	Foot	\$0.66	25	\$16.50		
Materials	84	Wild Rye, Virginia (Elymus virginicus)	Native Grasses and shipping.	Pound	\$9.81	2	\$19.62		
Equipment/Installation	959	Seeding Operation, Broadcast, Ground	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs.	Acre	\$20.36	1	\$20.36		
Equipment/Installation	945	Tillage, Light	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$9.93	1	\$9.93		
Equipment/Installation	1500	Water Bars	Installation of graded trail water controlling structures such as water bars, broad based dips for erosion control. Typical cross section is 1.5 feet high with 4:1 side slopes yielding about 0.33 CY/ft of length.	Foot	\$1.08	225	\$243.00		
Equipment/Installation	929	Dozer, 80 HP	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$55.16	6	\$330.96		
Equipment/Installation	931	Hydraulic Excavator, 1 CY	Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included.	Hour	\$93.35	3	\$280.05		
Equipment/Installation	933	Skidsteer, 80 HP	Skidsteer loader with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$35.06	3	\$105.18		
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	\$5.44	4	\$21.76		
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$26.31	8	\$210.48		
Labor	233	Equipment Operators, Heavy	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$21.98	6	\$131.88		

Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.67	8	\$149.36		
Labor	234	Supervisor or Manager	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$35.43	2	\$70.86		
Mobilization	1145	Mobilization, Supervisor or Manager	Mobilization of supervisors or management. Includes crew supervisors, foremen and farm/ranch managers, etc.	Hour	\$35.11	4	\$140.44		
Mobilization	1144	Mobilization, Heavy Equipment Operator	Mobilization of heavy equipment operators: Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$21.77	2	\$43.54		
Mobilization	1140	Mobilization, large equipment	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$173.20	2	\$346.40		
Mobilization	1142	Mobilization, General labor	Mobilization of general labor: Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$18.55	2	\$37.10		