

Fallen Bear

Transportation Report

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Appendices

- Appendix A, Project Area Map with road numbers
- Appendix B, Road Data Spreadsheet
- Appendix C, Cumulative Effects List

References

- Idaho Panhandle National Forest Land & Resource Management Plan, (USDA , Forest Service 1987)
- Ecosystem Assessment at the Watershed Scale (EAWS) for Quartz Gold Analysis Area (2004)
- The Quartz Gold Roads Analysis (USDA, Forest Service 2004)
- Northern Region, Cost Estimating Guide for Road Construction, Idaho Panhandle National Forests (USDA Forest Service)

Introduction

The St. Joe Ranger District is proposing vegetation treatment, road improvements and road management changes within the 10,523 acre area in the Fallen Bear Project Area. The project area lies about 16 air miles east of Avery, north of the St. Joe River in Shoshone County, Idaho within Haggerty Creek, Shady Creek, Tumbledown Creek, Bruin Creek, Stevens Creek, and other small side drainages.

The Fallen Bear Project proposal is to manage vegetation to maintain or improve resilience to disturbances such as insects, disease, and fire; with emphasis to shift vegetation composition towards historic conditions, improve watershed conditions for aquatic resources, increase wildlife security and provide wood products for local communities.

The purpose of the transportation analysis is to determine the most efficient means to access and treat areas within the Fallen Bear Project area and provide access for future management activities while protecting soil, water and other resources. Road management was analyzed during the roads analysis process (RAPS) for the Quartz Gold Analysis Area which includes the current Fallen Bear Project Area. The Fallen Bear ID team reviewed the Quartz Gold RAPS recommendations and concluded the findings were valid with minor adjustments.

Access to the Fallen Bear project area from St Maries and Avery is via Forest Highway 50, National Forest Road 339 (Quartz Creek) and Road 1223 (Bruin Creek). These arterial or major collector roads have the highest priority for maintenance and would be the primary roads for hauling timber from the project area. Secondary roads included in the road system, are maintained for high clearance vehicles and would be used for project activities.

The purpose of this transportation analysis is to determine the most efficient and environmentally sound methods to access and remove timber from proposed harvest units on the Fallen Bear Project while maintaining water quality and soil productivity. This report references the following documents:

- Idaho Panhandle National Forests Forest Plan, (1987)
- Ecosystem Assessment at the Watershed Scale (EAWS) for Quartz Gold Analysis Area (2004)
- The Quartz Gold Roads Analysis (USDA, Forest Service 2004)

The Quartz Gold Roads Analysis (USDA, Forest Service 2004) evaluated current declining budgets for road maintenance, reduction in timber sale-related maintenance and maintenance needs.

Road improvement work proposed for timber harvest includes opening closed system roads and again closing the roads after use, clearing encroaching vegetation on system

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roads, reconstructing system roads, and maintaining system roads. Improvements and harvest operations would include BMPs to maintain water quality and soil productivity. Roads identified in the RAPS that are not needed for future management activities would be decommissioned. Roads not needed in the near future would be closed for long term storage.

Existing Conditions

Forest Highway 50 (3.696 miles, within the project area) is asphalt surfaced and county maintained, all other roads in the project area are National Forest System Roads. Road 218K (0.177 miles) is asphalt surfaced, Road 1223 (5.217 miles) is improved native surfaced, all other National Forest System Roads are native surface. Existing road condition miles are included in Table 1 below under Alternative A, No Action. A complete list of roads by road number, lengths, status or closure method, and surface type is included in Appendix B.

Existing and Proposed Road Management Objectives

Management objectives for current conditions, Alternative A, and for proposed Alternatives B and C are shown in Table 1.

Table 1, Road Status Miles for Alternatives A, B and C Summary

Road Status	Existing (Alt A)	Alternative B	Alternative C
Open	19.45	9.09	9.09
Gate closure	21.37	6.17	6.17
Barrier closure	40.41	16.37	10.85
Long-term storage	14.20	32.50	37.49
Decommission	3.66	34.96	35.49
New road construction	0	2.69	0.77
All Roads	99.09	101.77	99.09
Final system road miles	95.43	66.82	63.77

Note: Road miles are from; rds_07.xls spread sheet Appendix B.

Note: Final road miles for Alternatives B and C are system road miles after roads not needed for future management actions are decommissioned.

Alternative B and C Actions

Alternative B actions would include:

- Harvest timber on 483 acres
- Pre-commercial thin 775 acres
- Treat white pine, prune blister rust 777 acres

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- Treat western larch seed trees 161 acres
- System road construction, 2.69 miles
- System road reconstruct, 17.92 miles
- System road recondition, 16.14 miles
- System road maintenance, 36.94 miles
- Close existing gated road with gate, 6.17 miles
- Long term store 15.58 miles system roads after harvest operations are complete
- Long term store 16.92 miles system roads not used for timber harvest
- Close with barrier 8.60 miles system road after harvest operations are complete
- Close with barrier 7.78 miles system road not used for timber harvest
- Decommission 34.96 miles of existing roads not used for timber harvest
- Open roads 9.09

Alternative C actions would include:

- Harvest timber on 294 acres
- Pre-commercial thin 775 acres
- Treat white pine, prune blister rust 777 acres
- Treat western larch seed trees 161 acres
- Road construct 0.77 miles of system roads
- Reconstruct 8.68 miles of system roads
- Recondition 15.32 miles of system roads
- System road maintenance 24.19 miles
- Close existing road with gate, 6.17 miles
- Long term store 8.01 miles system roads after harvest operations are complete
- Long term store 29.48 miles system roads not used for timber harvest
- Close with barrier 5.73 miles system road after harvest operations are complete
- Close with barrier 5.12 miles system road not used for timber harvest
- Decommission 35.49 miles of existing roads not used for timber harvest
- Open roads 9.09

System Road Construction

Under Alternative B, seven system road segments, a total of 2.69 miles, are proposed for construction. These roads are needed for access to harvest timber on the Fallen Bear project and would be used for future management in the Fallen Bear Project Area. All road construction plans, standards, and specifications would provide for minimum needed road width, drainage, and safe operation while incorporating measures for mitigating for resources disturbances. New roads would be single-lane facilities suitable for log truck and lowboy use. The following roads would be constructed:

- NC-01, 0.36 miles would extend Road 3697Z to access Unit 40 (estimated timber volume: 2200 CCF) for skyline yarding and hauling.
- NC-02, 0.09 miles (490 feet) would extend Road 3387UE to access the top of Unit 206 (estimated timber volume: 396 CCF) for tractor (ground based) and skyline skidding.
- NC-03, 0.37 miles, would branch off Road 3698A to access Unit 271 (estimated timber volume: 1400 CCF) for tractor and skyline skidding.

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- NC-04, 0.84 miles, would extend Road 3399 and has two segments, segment 01 would access Units 198 (estimated timber volume: 520 CCF) and 211 (estimated timber volume: 460 CCF) for tractor and skyline skidding. Segment 02, 0.51 miles, would access Units 226 (estimated timber volume: 2223 CCF) and 227 (715 CCF) for tractor and skyline skidding.
- NC-05, 0.51 miles, would branch off of Road NC-04 to access Unit 199 (estimated timber volume: 986 CCF) for tractor and skyline skidding.
- NC-06, 0.55 miles, would extend Road 3458A to access the lower parts of Units 148 (estimated timber volume: 477 CCF), 150 (235 CCF) and 165 (168 CCF) for tractor and skyline skidding.
- NC-07, 0.08 miles, would extend Road 3458 to access the upper part of Units 150 (estimated timber volume: 200 CCF) and 148 (150 CCF).

Table 2, Alternative B System Road Construction Miles and Cost would be included in the Timber Sale Contract

Road Number	Miles	Construction Cost	Associated Estimated Timber Volume (CCF)
NC-01	.36	18,200	2200
NC-02	.09	4,650	396
NC-03	.37	18,500	1400
NC-04-1	.33	16,650	980
NC-04-2	.51	25,400	2938
NC-05	.38	19,200	986
NC-06	.55	27,650	880
NC-07	.08	4,050	350
Total	2.69	\$134,300	10,130

Under Alternative C there would be 0.77 miles of new system road construction. NC-05, 0.621 miles would extend Road 3399 to access Unit 199A&B, 226A&B, 227A&B, and 233A&B. NC-02 would access Unit 198A&B (396 CCF).

Table 3, Alternative C system road construction miles and cost would be included in the Timber Sale Contract

Road Number	Miles	Construction Cost	Associated Estimated Timber Volume (CCF)
NC-05	0.62	31,000	4,386
NC-04	0.15	7,500	520
Total	0.77	\$38,500	2,596

Volumes for this table obtained from FV_12_Veg_Prop.exe

There would be no road construction under Alternative A, No Action.

Direct Effects

Road construction would be done near ridge tops on 35% side slopes or less. Average road clearing would be 2.5 acres/mile, 6.69 acres total road clearing for Alternative B. Alternative C would have 1.9 acres of clearing. New road cut and fill slopes would be seeded as part of construction, this would result in 1.7 acres/mile or a total 4.6 acres of

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road bed for 12 foot road with two feet fill widening. New constructed roads scheduled to be closed after operations are complete would be lightly scarified, cross drained and seeded before closure after harvest operations are complete.

Cumulative Effects

Under Alternative B new constructed road clearing would be added to existing road bed area in the project area. Table 4 below displays system road miles and estimated acres of road bed area by alternative. Acres are based on an average 14 foot road bed (12 foot with fill widening or two foot ditch).

Table 4, System road bed cleared area

Roads	Alternative A	Alternative B	Alternative C
System road miles	95.43	66.82	63.60
System road bed area, acres	161.9	113.4	107.9
New Road Construction area, acres (clearing)	0	4.6	1.3
Total acres road bed area	161.9	118.0	109.2

System Road Reconstruction

Roads in need of improvements for timber harvest access would be reconstructed. Reconstruction would be done on 17.92 miles of system roads under Alternative B and on 8.68 miles of system roads under Alternative C. These roads have not been maintained or road segments do not meet Best Management Practice standards. Reconstruction would improve roads to their approved traffic service level and improve safety, operational efficiency or resource protection (improve drainage to protect soil and water quality). The existing condition of roads to be reconstructed is inadequate for resource protection or anticipated use or the road is not suitable for the design vehicles. The intention is to bring these roads into compliance with the assigned maintenance level and function, not to improve the road beyond its planned function. Road reconstruction plans, standards and specifications would provide for 12 foot road width, effective drainage and safe operations while incorporating mitigation measures for resource protection. Reconstruction may include cut and fill reshaping, installation of drain dips and culverts, culvert armoring, catch basin reshaping, grading, clearing encroaching vegetation including road surface clearing and grubbing (where trees and brush have grown in), dust abatement, and resurfacing. Roads that would remain open for public motor vehicle travel would be reconstructed to ensure a quality long-term running surface with minimum maintenance costs. On roads proposed for reconstruction that would be closed or decommissioned after timber harvest is complete, reconstruction would be done to a lower standard to minimize soil disturbance and to reduce costs. Reconstruction cost would be included in the timber sale appraisal and performed under the timber sale or stewardship contract. Average road reconstruction cost is \$12000/mile.

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Spot reconstruction would be done on roads where the improvements are confined to a limited area, such as culvert installations, rebuilding a shoulder or adding turnouts. Areas between the reconstruction spots may only require reconditioning and maintenance.

Road reconstruction would include replacing undersized culverts, where needed, with culverts large enough to accommodate a 100-year flood event.

Table 5 displays proposed road reconstruction miles and costs for Alternatives B and C. There would be no road reconstruction under No Action Alternative A.

Table 5, System road reconstruction included in the Timber Sale Contract

Road Number	Alternative B Road Miles	Alternative B Total Cost	Alternative C Road Miles	Alternative C Total Cost
1231	3.79	45504	1.16	13884
3309	1.33	15984	1.33	15984
3350	1.24	14892	1.24	14892
3368	0.82	9828		
3387	0.23	2736		
3399	0.93	11196	0.93	11196
3458	1.64	19716	1.15	13800
3459	0.22	2616	0.22	2616
3696	1.62	19452	0.01	120
3698	0.71	8532		
1223UM	0.24	2832	0.24	2832
3309UA	0.06	744	0.06	744
3350AZ	0.92	11064	0.92	11064
3387UC	0.69	8256		
3387UE	0.16	1968		
3399UD	1.42	17040	0.63	17040
3458A	0.93	11208		
3697Z	0.86	10296		
3698A	0.10	1140		
Total	17.92	215004	8.68	104172

Alternative C could reach most of Unit 183a with no reconstruction.
Road 3698AUA is included as new construction, NC-03 in Table 2.

Direct Effects

Road reconstruction would clear existing vegetation from grown-in roads. Roads to be closed after harvest operations are complete would be cross drained to prevent water channeling to reconstructed road surfaces, light scarified and seeded. Long term stored roads would have drainage structures removed.

Cumulative Effects

Reconstructed roads, 17.92 miles (30 acres of road surface cleared area) under Alternative B and 8.68 miles (15 acres of road surface area) under Alternative C would be added to the existing open road bed surface area. These native surface roads would be maintained during harvest operations. After harvest operations are complete the roads would be scarified and seeded to reestablish vegetation on the area.

System Road Reconditioning

Road reconditioning would be performed to incorporate basic erosion control measures into existing roads surfaces. Road reconditioning measures would include reshaping and processing road surface material, ditch cleaning and reshaping, brushing or clearing, installation of drain dips or cross drains, relief pipes and out sloping roads where there are problems with surface erosion or water transfer, culvert armoring, catch basin reshaping, grading, and dust abatement.

Table 5, System road reconditioning included under the Timber Sale Contract

Road Number	Alternative B Road Miles	Alternative B Total Cost	Alternative C Road Miles	Alternative C Total Cost
1223	7.11	9947	7.11	9947
3351	2.32	3251	2.32	3251
3399	2.39	3352	2.39	3352
3723	3.19	4472	3.19	4472
3351A	1.13	1575	0.31	428
Total	16.14	22596	15.32	21449

Road reconditioning, 16.14 miles under Alternative B and 15.32 miles under Alternative C would improve drainage structures, improve road surfaces, reduce sediment delivery and generally reduce effects on soil and water by implementing BMPs. Reconditioned roads to be closed after harvest operations are complete would be cross drained to prevent water channeling to road surfaces, light scarified and seeded. Long term stored closed roads would have drainage structures removed. BMPs applied to reconditioned roads would reduce loss of surface fines and reduce sediment delivery.

Road Maintenance for Timber Harvest Operations

Road maintenance would improve the existing road features and bring the road into compliance with Best Management Practice standards (BMPs). Maintenance activities would be performed to the road’s assigned Maintenance Level. Maintenance would include drain dip or cross drain construction, culvert armoring, minor culvert installation, catch basin reshaping, cutting and clearing road side vegetation, surface grading, road surface seeding, shaping and grading the road prism, cleaning ditches, cleaning culverts and other drainage structures, and removing hazard trees, down trees and rocks. Roads used for timber harvest operations would be maintained under the Timber Sale Contract with costs included in the appraisal.

Maintenance would be done on 36.94 system road miles for Alternative B and 24.19 miles for Alternative C. Table 6 displays roads proposed for maintenance under Alternative B and C. Under Alternative A, roads would be maintained under the current annual District road maintenance schedule.

Table 6, System road maintenance under the timber sale contract

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Road No	Mtc Level	Alt B Miles	Alt B Cost	Alt C Miles	Alt C Cost
1223	3	5.63	3659	7.16	4656
1223	2	1.53	843		
1231	2	3.80	2089	1.16	752
3309	2	1.33	733	1.33	866
3350	1	1.24	558	1.24	558
3351	1	2.32	1046	2.32	1046
3368	2	0.82	450	0	0
3387	1	0.23	103	0.01	
3399	1	3.33	1497	3.33	1497
3458	2	1.65	909	1.16	522
3459	1	0.22	98	0.22	98
3696	1	1.65	743	0.03	13
3698	1	0.71	320	0	0
3723	1	3.30	1485	3.30	1485
1223UM	1	0.24	106	0.24	106
3309UA	1	0.06	28	0.06	28
3350AZ	1	0.92	415	0.92	415
3351A	1	1.12	506	0.31	138
3387UC	1	0.69	310	0	0
3387UE	1	0.16	74	0	0
3399UD	1	1.42	639	1.42	639
3458A	2	0.93	514	0	
3697Z	1	0.86	386	0	0
3698A	1	0.095	43	0	0
NC01	1	0.36	164	0.62	275
NC02	1	0.09	42	0.15	68
NC03	1	0.37	166	0	0
NC04	1	0.83	375	0	0
NC05	1	0.38	173	0	0
NC06	1	0.5	2489	0	0
NC07	1	0.081	36	0	0
Total		36.94	18758	24.19	13160

Note: NC-03 = old road 3698AUA, 0.370 miles.

Note: Total road maintenance miles in Table 6 do not include county maintenance for FH 50.

BMPs applied during road maintenance, 36.94 miles under Alternative B and 24.19 miles under Alternative C would improve drainage structures, improve road driving surface, reduce sediment delivery and generally improve effects on soil and water.

Road Scarification and Seeding

Light scarification and seeding would be performed on roads proposed to be closed under management prescriptions B and C that would not be used in the near future or on roads that would receive very light motor vehicle use. Activities would include scarifying less than three inches deep on the road surface using a cultivator blade or scarifier on a motor grader or similar equipment. Grass seed and fertilizer would be applied to the road surface and any disturbed cut and fill areas at forest approved rates and species mix for

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each road segment. The intent of treatment is to improve water infiltration, reduce erosion and reduce risk of noxious weed establishment. Road closure costs on roads used for timber harvest, would be included in the appraisal and closure work would be performed under the Timber Sale Contract. Scarification and seeding cost for roads to be closed that are not used for timber harvest would be funded from appropriated dollars.

Road Closure with Gate After Timber Harvest

Public motorized vehicle travel would be prohibited or restricted on gated roads. The road prism on roads closed by gate would remain accessible for administrative motorized vehicle use. The existing gate on Road 3723 would continue to close 6.17 miles of road under Alternatives B and C. There are 21.37 miles of gated roads in the project area now, existing conditions, under Alternative A, No Action.

Long Term Road Storage

Management Prescription C is long-term storage with no foreseeable use for the road in the next 15 to 25 years, although the road may be needed in the distant future. Under Alternatives B, 32.50 miles, under Alternative C 37.49 miles of road would be closed long term. The intent of this prescription is to put the road into “long-term storage” where the road is not a sediment source and would not collect or channel water. Long-term closed roads would be out-sloped and have drainage structures removed. The road prism would be left intact (except the beginning sight distance at the road junction and at stream crossings) and in a condition that would not require maintenance. All water courses and problem areas would be stabilized. The intent for long-term storage is to minimize sediment production and to disperse run off water. The roadbed would have water bars or cross drains installed and the road bed would be light scarified or decompacted and the road bed seeded or planted to establish a vegetative cover on the road prism. Motorized vehicle use would be excluded by entrance recontouring. Long term closed roads would remain on the transportation system. Access management strategy is to eliminate or prohibit motorized use while the road is in storage. Estimated average cost of work for long term road storage is \$4500/mile.

Table 7, System road long term road storage of roads used for timber Harvest

Alternative B			Alternative C		
Road No	Miles	Total Cost	Road No	Miles	Total Cost
3309	1.33	5994	3351	0.01	9
3351	2.32	10458	3351	0.23	1048
3368	0.82	3686	3350AZ	0.92	4149
3458	1.65	7434	3696	0.01	45
3459	0.22	981	3399UD	0.79	3568
3696	1.65	7430	3351	2.09	9400
3698	0.71	3200	3696	0.01	36
1223UM	0.24	1062	1223UM	0.24	1062
3309UA	0.06	279	3458	0.15	693

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Alternative B			Alternative C		
Road No	Miles	Total Cost	Road No	Miles	Total Cost
3350AZ	0.92	4149	3696	0.01	45
3351A	0.31	1377	3458	0.01	40
3351A	0.82	3686	3309UA	0.06	279
3387UC	0.52	2362	3399UD	0.63	2821
3387UC	0.16	734	3459	0.22	981
3387UE	0.16	738	3458	0.23	1021
3399UD	1.42	6390	3458	0.77	3460
3458A	0.93	4203	3309	1.33	5994
3697Z	0.86	3861	3351A	0.31	1377
3698A	0.10	428			
3698AUA	0.37	1660			
Total	15.58	70110	Total	8.01	36032

Long Term Road Storage, roads not used for timber harvest operations

Table 8 includes road numbers, miles and costs for roads planned for long term storage that would not be used for timber harvest. Closure costs would be funded from appropriated money when available.

Table 8 Long term road storage not used for timber harvest

Alternative B			Alternative C		
Road No	Miles	Total cost	Road No	Miles	Total cost
1224	0.78	3510	3698A	0.10	427.5
1228	2.21	9932	3698A	0.63	2830.5
3309	0.32	1436	3351	0.35	1584
3310	0.35	1557	3698A	0.24	1080
3351	0.35	1584	3376UB	1.35	6057
3368	0.11	477	3350B	0.50	2272.5
3376	0.65	2934	3399UD	0.01	27
3398	1.44	6489	3399UD	0.01	49.5
3466	0.04	176	3399UD	0.37	1665
3696	0.50	2228	3376	0.34	1521
1223A	0.29	1287	3387UC	0.52	2362.5
1223AUA	0.37	1665	3368	0.15	693
1223AUB	0.16	702	3387UC	0.16	733.5
1223UAI	0.55	2470	3698	0.71	3199.5
1223UB	0.60	2704	3696	0.08	337.5
1223UF	0.57	2565	3376	0.31	1413
1223UG	0.32	1431	3696	0.32	1417.5
1223UH	0.49	2223	3466A	0.40	1795.5
1223UI	0.89	3992	3466A	0.23	1048.5
1224UA	1.08	4838	1223	0.03	117
214AUA	0.41	1827	3466	0.04	175.5
3310A	0.73	3272	3696	0.21	927
3350B	0.50	2272	3696	0.01	54

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Alternative B			Alternative C		
Road No	Miles	Total cost	Road No	Miles	Total cost
3376UB	1.35	6057	3696	0.63	2839.5
3399UD	0.39	1742	3458	0.36	1602
3466A	0.63	2844	1223UG	0.32	1431
3698A	0.87	3910	3398	0.19	859.5
Total	16.92	76122	3310	0.35	1557
			3310A	0.73	3271.5
			3458	0.14	616.5
			3696	0.38	1728
			1223UH	0.49	2223
			3458A	0.93	4203
			1223	1.69	7587
			3696	0.23	1053
			3696	0.01	13.5
			1228	1.18	5324
			1223UB	0.60	2704
			1228	0.50	2232
			1223	1.41	6354
			1223	0.02	72
			1223	0.02	72
			3696	0.26	1161
			3697Z	0.86	3861
			1228	0.53	2376
			1224	0.45	2043
			1223UI	0.18	788
			1223UI	0.05	234
			1224	0.01	9
			1224	0.32	1458
			1223UAI	0.55	2470
			1223AUB	0.16	702
			1223AUA	0.11	486
			1223	1.14	5112
			1223UI	0.66	2970
			1223	1.16	5216
			1223	0.02	72
			1223	0.01	36
			1223A	0.29	1287
			1223AUA	0.26	1179
			1223	0.05	216
			214AUA	0.41	1827
			1224UA	0.45	2030
			1224UA	0.62	2808
			3398	1.25	5630
			1223UF	0.57	2565
			3309	0.32	1436
			3368	0.66	2992

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Alternative B			Alternative C		
Road No	Miles	Total cost	Road No	Miles	Total cost
			3368	0.11	477
			3351A	0.82	3686
			Total	29.48	132656

Direct Effects

Long term road storage, 32.47 miles under Alternative B and 37.49 miles under Alternative C, would improve road surfaces for water infiltration, reduce sediment delivery and generally improve effects on soil and water while the road is in storage. Drainage structures that have a potential or risk of failure on long term stored roads would be removed. The closed roads would be cross drained to prevent water channeling to road surfaces, light scarified and seeded.

Road Closure with Barrier

Barriers would be installed to close 16.38 road miles under Alternatives B and 10.85 miles under Alternative C to prevent motorized vehicle travel. The road prism would remain accessible for future motorized vehicle use. The use and need for roads managed under Road Management Prescription B is anticipated to occur at a lower frequency. The roads would remain closed for five to 15 years between uses and would remain on the transportation system for future use. Culverts assessed to have a high risk of failure would be removed, and the road surface would be water barred or cross drained, scarified and seeded. Motorized travel would be controlled with a physical barrier such as large rocks, earth or concrete barrier, or guardrail. Access management strategy during closure is to eliminate all vehicles over 50 inches wide except for administrative use. Use by vehicles under 50 inches wide would not change from the existing condition. Average barrier road closure cost is \$1000/mile.

Road miles and costs for roads to be closed with barrier after use for timber harvest include 8.60 miles under Alternative B, and 5.73 miles under Alternative C. These roads would be closed under the Timber Sale Contract as shown in Table 9 below.

Table 9, System road closure with barrier after use for timber harvest operations

Alternative B			Alternative C		
Road No	Miles	Total Cost	Road No	Miles	Total Cost
1231	3.80	3798	3350	0.21	211
3350	1.24	1241	3387	0.01	1
3387	0.23	229	3399	0.66	660
3399	3.33	3327	3399	0.27	273
Total	8.60	8595	3350	1.03	1030
			3399	0.79	792
			1231	0.11	112
			1231	0.02	16
			3399	0.65	647
			3399	0.17	169

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Alternative B			Alternative C		
Road No	Miles	Total Cost	Road No	Miles	Total Cost
			1231	0.30	295
			3399	0.39	386
			3399	0.40	400
			1231	0.25	247
			1231	0.49	487
			Total	5.73	5726

Table 10 includes road to be closed with barrier that would not be used for timber harvest and would not be included as part of the Timber Sale Contract. Under Alternative B, 7.78 miles would be closed, under Alternative C, 5.12 miles would be closed.

Table 10, Road barrier not used for timber harvest operations

Alternative B			Alternative C		
Road No	Miles	Total cost	Road No	Miles	Total cost
1223	5.52	5523	1231	0.24	245
1231	0.24	245	1231	0.01	6
3350	0.78	782	1231	0.13	133
214A	0.88	880	1231	1.30	1296
Total	7.78	7779	3350	0.61	606
			1231	0.14	137
			3350	0.18	176
			3387	0.02	18
			3387	0.23	228
			3387	0.31	309
			3387	0.02	22
			214A	0.88	880
			1231	1.07	1069
			Total	5.12	5125

Road Decommissioning

Roads not needed for resource management in the foreseeable future would be decommissioned. The purpose for decommissioning is to restore water flow and infiltration and improve water quality by eliminating road prism interception by decompacting the soil and restoring vegetation. After decommissioning the road would no longer be accessible for motorized travel. Many of the roads proposed for decommissioning were constructed for jammer logging equipment in the 50's, 60's and 70's, where 200 to 300 foot road spacing was needed. This high density road "system" would not be needed for current and future skyline or ground based yarding.

The goals of this prescription are to restore site productivity, eliminate the potential of road failures, and reestablish natural water infiltration and drainage patterns. Recontouring or partial pullback would be applied to site-specific conditions and could

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range from about 20 to 100 percent of the roads length. Prescription D (decommissioning) may require only partial recontouring, pulling up the amount of fill necessary to stabilize slope conditions. Some cut and fill slopes or parts of cut and fill slopes may be evident in areas of recontouring. Following prescription implementation, roads would be removed from the National Forest Road System. Access management strategy is to eliminate all motorized use.

The road surface would be decompacted and major fills, embankments, and high failure risk areas would be pulled up onto the roadbed to stabilize. Drainage structures would be removed from stream channels, and the adjacent slopes would be restored to resemble natural conditions. Decommissioning activities would include deep roadbed scarification, constructing water bars or cross drains, outsloping, slash placement on the road prism, seeding and mulching where needed, culvert removal, reshaping draws and creek crossings, recontouring, seeding and planting with a forest approved seed mixture. Entrance closure on decommissioned roads would include boulder or large woody debris placement and recontouring beyond sight distance of the road entrance. Under Alternative B, 34.96 miles and under Alternative C, 35.49 miles of road would be included in Road Management Prescription D. None of the decommissioned roads would be used for timber harvest activities. Decommissioning would be done under a service contract or could be included in a stewardship contract. Average decommissioning cost is \$9000/mile.

Road miles and costs, to be decommissioned, under Alternatives B and C, are shown in Table 11.

Table 11, Road decommissioning miles and costs for Alternatives B and C.

Alternative B			Alternative C		
Road No	Miles	Total Cost	Road No	Miles	Total Cost
1224	0.69	6201	1224	0.69	6201
3310	0.94	8460	3310	0.94	8460
3368	0.64	5751	3368	0.64	5751
3376	1.05	9450	3376	1.05	9450
3376	0.35	3177	3376	0.35	3177
3390	0.02	180	3390	0.02	180
3398	0.20	1791	3398	0.20	1791
3400	1.19	10746	3400	1.19	10746
3466	0.98	8829	3466	0.98	8829
3680	1.69	15210	3680	1.69	15210
3695	1.42	12780	3695	1.42	12780
3698	1.48	13311	3698	1.48	13311
3699	1.23	11070	3699	1.23	11070
1223A	0.32	2853	1223A	0.32	2853
1223UB	0.54	4824	1223UB	0.54	4824
1223UC	0.60	5391	1223UC	0.60	5391
1223UD	0.45	4077	1223UD	0.45	4077

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Alternative B			Alternative C		
Road No	Miles	Total Cost	Road No	Miles	Total Cost
1223UE	1.04	9360	1223UE	1.04	9360
1223UF	0.38	3438	1223UF	0.38	3438
1223UG	0.62	5598	1223UG	0.62	5598
1223UJ	0.38	3501	1223UJ	0.39	3501
1223UN	0.15	1368	1223UN	0.15	1368
1223UO	0.54	4860	1223UO	0.54	4860
1223UP	0.31	2799	1223UP	0.31	2799
1223UQ	0.32	2916	1223UQ	0.32	2916
1223UR	0.43	3861	1223UR	0.43	3861
1223US	0.46	4167	1223US	0.46	4167
1223UZ	0.22	1998	1223UZ	0.22	1998
1224UA	0.73	6588	1224UA	0.73	6588
1228A	0.54	4815	1228A	0.54	4815
1228UA	0.27	2448	1228UA	0.27	2448
1231UC	1.34	12051	1231UC	1.34	12051
214B	0.41	3708	214B	0.41	3708
214BUA	0.31	2772	214BUA	0.31	2772
3310UA	0.66	5922	3310UA	0.66	5922
3310UB	0.31	2826	3310UB	0.31	2826
3368UA	0.07	666	3368UA	0.07	666
3376A	1.07	9630	3376A	1.07	9630
3376AUA	0.43	3879	3376AUA	0.43	3879
3376UA	0.17	1530	3376UA	0.17	1530
3387UB	0.13	1188	3387UB	0.13	1188
3387UD	0.03	306	3387UE	0.16	1476
3387UH	0.26	2304	3387UD	0.03	306
3393A	0.26	2340	3387UH	0.26	2304
3399UA	0.91	8181	3393A	0.26	2340
3399UB	0.04	369	3399UA	0.91	8181
3399UC	0.77	6903	3399UB	0.04	369
3399UE	0.57	5103	3399UC	0.77	6903
3399UF	0.07	621	3399UE	0.57	5103
3399UG	0.51	4608	3399UF	0.07	621
3400UA	0.56	5013	3399UG	0.51	4608
3458UA	0.20	1755	3400UA	0.56	5013
3466AUA	0.18	1611	3458UA	0.20	1755
3681UA	0.74	6660	3466AUA	0.18	1611
3681UB	0.52	4707	3681UA	0.74	6660
3681Z	1.11	9990	3681UB	0.52	4707
3695UA	0.67	6021	3681Z	1.11	9990
3696UA	1.29	11574	3695UA	0.67	6021
3696UB	0.56	5004	3696UA	1.29	11574
3696UC	0.02	171	3696UB	0.56	5004
3696UD	0.09	774	3696UC	0.02	171

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Alternative B			Alternative C		
Road No	Miles	Total Cost	Road No	Miles	Total Cost
3698AUB	0.31	2826	3696UD	0.09	774
3698AUC	0.20	1764	3698AUB	0.31	2826
			3698AUC	0.20	1764
Total	34.96	314595	Total	35.49	319410

Note; Road 3387UE, 0.164 miles is decommission under Alt C and long term store under Alt B.

Road Density

Average open drivable road density within the project area, including open roads and gated roads, is 2.48 miles/sq. mile under Alternative A, 0.93 miles/sq. mile under Alternative B, and 0.93 miles/sq. mile under Alternative C. Total road density, including all grown in roads is displayed in Table 12 below.

Table 12, Road density by alternative in the project area

Road Status	Existing Miles	Existing Miles/sect.	Alt B Miles	Alt B Miles/sect	Alt C Miles	Alt C Miles/sect
Open	19.45	1.18	9.09	0.55	9.09	0.55
Gated	21.37	1.30	6.17	0.38	6.17	0.38
Barrier	40.41	2.46	16.37	1.00	10.85	0.66
Long-term storage	14.20	0.86	32.50	1.98	37.49	2.28
Decommission	3.66		34.95		35.12	
All Roads	99.09	6.03	64.13	3.90	63.60	3.87

Summary

Road construction, reconstruction, and reconditioning and maintenance costs are from St. Joe District experienced average cost per mile. Road costs include opening grow-in roads, and include rehabilitation and seeding after operations are complete. Road costs associated with roads used for timber harvest operations would be included timber sale appraisal and activities would be performed under the timber sale contract, or road work activities would be included in a stewardship contract.

Table 13, Alternative B Road activities miles and cost summary

Activity	Timber Sale Miles	Timber Sale Cost	Non-timber Sale Miles	Non-timber Sale Cost	Total Miles	Total Cost
Road Construction	2.69	134300			2.69	134300
Road Reconstruction	17.92	215040			17.92	215040
Road Recondition	16.14	22596			16.14	22596
Road Maintenance	36.94	18758			36.94	18758
Road Close Gate (existing gate)	6.17	0			6.17	0
Road Long Term Store	15.58	70110	16.92	76122	32.50	146232

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Activity	Timber Sale Miles	Timber Sale Cost	Non-timber Sale Miles	Non-timber Sale Cost	Total Miles	Total Cost
Road Close Barrier	8.60	8595	7.78	7779	16.37	16374
Road Decommission			34.95	314595	34.95	314595
Total		450641		398496		849137

Table 14, Alternative C Road activities miles and cost summary

Activity	Timber Sale Miles	Timber Sale Cost	Non-timber Sale Miles	Non-timber Sale Cost	Total Miles	Total Cost
Road Construction	0.77	38500			0.77	38500
Road Reconstruction	8.68	104172			8.68	104172
Road Recondition	15.32	21449			15.32	21449
Road Maintenance	24.19	13160			24.19	13160
Road Close Gate (existing gate)	6.17	0			6.17	0
Road Long Term Store	8.01	36032	29.48	132656	37.49	168688
Road Close Barrier	5.73	5726	5.12	5125	10.85	10851
Road Decommission		0	35.49	319410	35.49	319410
Total		21903		457191		676230

Road cost assumptions = cost/mile based on St. Joe District experienced costs from Brent Riggs 06-04-08.

- Construction \$50,000
- Reconstruction \$12,000
- Reconditioning \$1,400
- Barrier closure \$1,000
- Long term closure \$4,500
- Decommission \$9,000
- Maintenance: level 3, \$650; level 2, \$550; level 1, \$450

Table 15, Road activity summary miles

Action	Alternative		
	A (no action)	B	C
Road Construction	0	2.69	0.62
Road Reconstruction	0	17.92	8.68
Road Recondition	0	16.14	15.32
Haul Road Used	0	38.33	27.89
Road Maintenance	0	36.94	24.19
Gate Closure	21.37	6.17	6.17
Long Term Store	14.20	32.50	37.49
Barrier Closure	40.41	16.38	10.85
Decommission	3.66	34.96	35.49
Open Roads	19.45	9.09	9.09

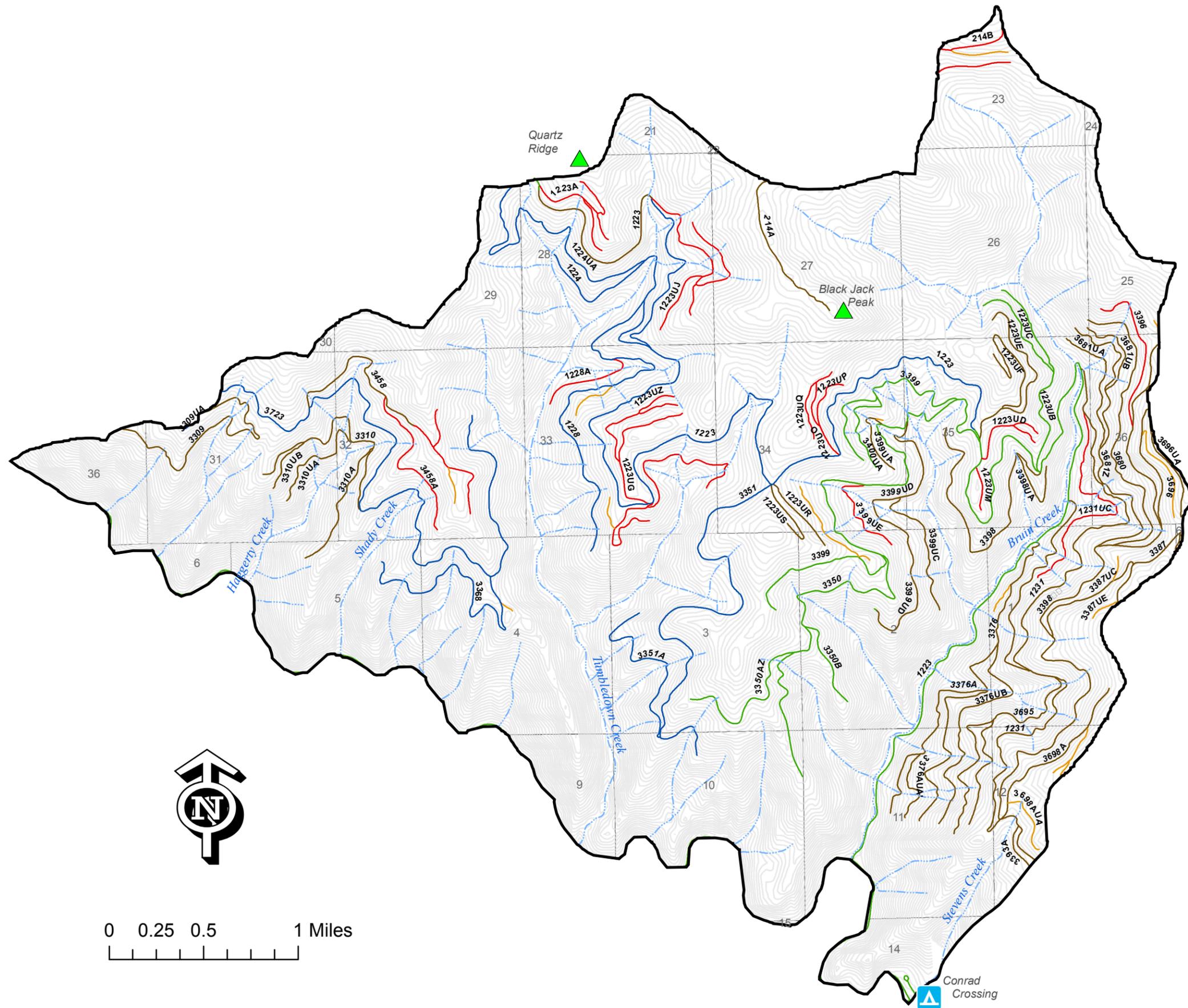
Note: FH 50 haul miles are not included in maintenance miles.

Note: Alternative C decommission includes road 3698AUA, included as new construction NC-03 under Alternative B.

**Appendix A –
Project Area Map with Roads**

Fallen Bear Environmental Assessment

Existing Road Management Prescriptions



Fallen Bear Roads

- Open Roads
- Gate (Rx A)
- Barrier (Rx B)
- Long-Term Storage (Rx C)
- Decommission (Rx D)
- Contours (40 ft.)
- Project Area Boundary
- - - Streams

Conrad Crossing

Appendix B
Road Data Spreadsheet

Fallen Bear Transportation Report

RTE_NO	MILES	ALT B HAUL_RD	Existing Rx	Alt_B_RX	Alt B Const Level	ALT_C	ALTC HAUL RD	Alt C Const Level
218K	0.023927859	NO	Open	Open		OPEN	NO	
218K	0.153005965	NO	Open	Open		OPEN	NO	
50	0.184928275	YES	Open	Open		OPEN	YES	
50	0.124274371	YES	Open	Open		OPEN	YES	
50	0.096318888	YES	Open	Open		OPEN	YES	
50	0.077675422	YES	Open	Open		OPEN	YES	
50	0.723968733	YES	Open	Open		OPEN	YES	
50	0.122222532	YES	Open	Open		OPEN	YES	
50	0.012427394	YES	Open	Open		OPEN	YES	
50	0.108729877	YES	Open	Open		OPEN	YES	
50	0.055927292	YES	Open	Open		OPEN	YES	
50	0.065245588	YES	Open	Open		OPEN	YES	
50	0.192650986	YES	Open	Open		OPEN	YES	
50	0.009321239	YES	Open	Open		OPEN	YES	
50	0.093206027	YES	Open	Open		OPEN	YES	
3393A	0.260111326	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
1231	0.245187445	NO	B - Barrier	B - Barrier		B - BARRIER	NO	
1231	0.006213546	YES	B - Barrier	B - Barrier		B - BARRIER	NO	
1231	0.133375164	YES	B - Barrier	B - Barrier	Reconstruction	B - BARRIER	NO	
3698A	0.095326056	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
3695	0.29803854	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3695	0.006213783	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3698AUB	0.106556884	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3698AUC	0.117643893	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3376A	0.415306969	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3376AUA	0.430996904	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3698AUC	0.015535038	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3698AUC	0.006214058	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3351	0.001676653	YES	Open	C - Long Term Storage		C - LONG TERM ST	YES	
50	0.074570412	YES	Open	Open		OPEN	YES	
3698AUC	0.055927668	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3698A	0.628892843	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
3698AUB	0.207013665	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3351	0.352046588	NO	A - Gate	C - Long Term Storage		C - LONG TERM ST	NO	
50	0.189757687	YES	Open	Open		OPEN	YES	
3695	0.541216533	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	

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RTE_NO	MILES	ALT B HAUL_RD	Existing Rx	Alt_B_RX	Alt B Const Level	ALT_C	ALTC HAUL RD	Alt C Const Level
3695UA	0.669030028	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3351	0.233015513	YES	A - Gate	C - Long Term Storage	Reconditioning	C - LONG TERM ST	YES	Recondi tioning
3376A	0.655225575	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3376	1.050154782	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3698A	0.239831238	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
3695	0.574545226	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
1231	1.296365868	YES	B - Barrier	B - Barrier	Reconstruction	B - BARRIER	NO	
3350	0.605515222	NO	Open	B - Barrier		B - BARRIER	NO	
50	0.108741905	YES	Open	Open		OPEN	YES	
50	0.024858691	YES	Open	Open		OPEN	YES	
1231	0.1368756	YES	B - Barrier	B - Barrier	Reconstruction	B - BARRIER	NO	
50	0.164665009	YES	Open	Open		OPEN	YES	
50	0.043494242	YES	Open	Open		OPEN	YES	
50	0.267194724	YES	Open	Open		OPEN	YES	
3350AZ	0.922446515	YES	Open	C - Long Term Storage	Reconstruction	C - LONG TERM ST	YES	Reconst ruction
3350	0.176327761	NO	Open	B - Barrier		B - BARRIER	NO	
3376	0.353351372	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3376UB	1.345896981	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
3698	1.474525915	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3698	0.003794993	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3350	0.211319366	YES	Open	B - Barrier	Reconstruction	B - BARRIER	YES	Reconst ruction
3350B	0.505219968	NO	Open	C - Long Term Storage		C - LONG TERM ST	NO	
3399UD	0.006213481	NO	Open	C - Long Term Storage		C - LONG TERM ST	NO	
3399UD	0.010716824	NO	Open	C - Long Term Storage		C - LONG TERM ST	NO	
3368UA	0.074448447	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3387UE	0.164454594	YES	D - Decommission	C - Long Term Storage	Reconstruction	D - DECOMMISSION	NO	
3387	0.018326567	NO	B - Barrier	B - Barrier		B - BARRIER	NO	
3399UD	0.370049434	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
3387UH	0.017175031	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3387UH	0.00932484	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3387UH	0.118060297	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3376UA	0.170468953	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3376	0.337651723	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
3387UC	0.525065177	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
3368	0.154033484	YES	A - Gate	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
50	0.503328706	YES	Open	Open		OPEN	YES	

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RTE_NO	MILES	ALT B HAUL_RD	Existing Rx	Alt_B_RX	Alt B Const Level	ALT_C	ALTC HAUL_RD	Alt C Const Level
3387	0.228049087	YES	B - Barrier	B - Barrier	Reconstruction	B - BARRIER	NO	
3387	7.16228E-04	YES	B - Barrier	B - Barrier		B - BARRIER	YES	
3387UC	0.16278101	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
3399	0.659538024	YES	Open	B - Barrier	Reconstruction	B - BARRIER	YES	Reconst ruction
3387UB	0.132446594	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3399UF	0.068758075	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3399	0.272891689	YES	Open	B - Barrier	Reconstruction	B - BARRIER	YES	Reconst ruction
3350	1.029918793	YES	Open	B - Barrier	Reconstruction	B - BARRIER	YES	Reconst ruction
50	0.161564913	YES	Open	Open		OPEN	YES	
50	0.016912659	YES	Open	Open		OPEN	YES	
3698	0.710903737	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
3696	0.010393007	YES	B - Barrier	C - Long Term Storage		C - LONG TERM ST	YES	
3696	0.07470778	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
1223	2.130789831	YES	Open	Open	Reconditioning	OPEN	YES	Recondi tioning
3376	0.313907609	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
3387	0.30892328	NO	B - Barrier	B - Barrier		B - BARRIER	NO	
3387UH	0.111681887	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3387UD	0.03396833	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3387	0.021735435	NO	B - Barrier	B - Barrier		B - BARRIER	NO	
3696	0.315166696	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
3466A	0.399299143	NO	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	NO	
3466A	0.233143749	NO	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	NO	
50	0.274079478	YES	Open	Open		OPEN	YES	
1223	0.026068162	NO	A - Gate	B - Barrier		C - LONG TERM ST	NO	
3466	0.0388131	NO	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	NO	
1223	0.290630607	YES	Open	Open	Reconditioning	OPEN	YES	Recondi tioning
3699	1.229940357	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3399UD	0.793345153	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	YES	Reconst ruction
3466AUA	0.178681549	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3696	0.205579333	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
3723	1.289555976	YES	A - Gate	A - Gate	Reconditioning	A - GATE	YES	Recondi tioning
3696	0.012428152	YES	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	

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RTE_NO	MILES	ALT B HAUL_RD	Existing Rx	Alt_B_RX	Alt B Const Level	ALT_C	ALTC HAUL RD	Alt C Const Level
3399UG	0.512140918	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3399UE	0.567460939	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
3351	2.089047189	YES	A - Gate	C - Long Term Storage	Reconditioning	C - LONG TERM ST	YES	Recondi tioning
1223US	0.462657356	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
1223	0.001867251	NO	Open	A - Gate		A - GATE	NO	
1223	0.007746591	YES	A - Gate	A - Gate	Reconditioning	A - GATE	YES	Recondi tioning
1223UR	0.428590991	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3696	0.008235286	YES	B - Barrier	C - Long Term Storage		C - LONG TERM ST	YES	
3696	0.630648922	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
3399	0.791837833	YES	Open	B - Barrier	Reconditioning	B - BARRIER	YES	Recondi tioning
3458	0.35562924	YES	C - Long Term Storage	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
1223UM	0.235965135	YES	C - Long Term Storage	C - Long Term Storage	Reconstruction	C - LONG TERM ST	YES	Reconst ruction
1231	0.11186061	YES	B - Barrier	B - Barrier	Reconstruction	B - BARRIER	YES	Reconst ruction
1231	0.015535304	YES	B - Barrier	B - Barrier	Reconstruction	B - BARRIER	YES	Reconst ruction
1223UG	0.318073954	NO	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	NO	
1223	0.056703678	YES	Open	Open	Reconditioning	OPEN	YES	Recondi tioning
1223	0.404170901	YES	A - Gate	A - Gate	Reconditioning	A - GATE	YES	Recondi tioning
3466	0.980996827	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
3398UA	0.487925789	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3398	0.190901023	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
3310	0.345897605	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
3310A	0.726881142	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
3681Z	0.210893534	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3458	0.136508736	YES	C - Long Term Storage	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
3310	0.301386698	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3310UB	0.314308549	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
1223	0.090686062	YES	Open	Open	Reconditioning	OPEN	YES	Recondi tioning
3310	0.157187646	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
1223	0.017320163	YES	Open	Open	Reconditioning	OPEN	YES	Recondi tioning

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RTE_NO	MILES	ALT B HAUL_RD	Existing Rx	Alt_B_RX	Alt B Const Level	ALT_C	ALTC HAUL_RD	Alt C Const Level
1223	1.139412201	YES	Open	Open	Reconditioning	OPEN	YES	Recondi tioning
3696UA	0.526005454	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
1223	0.033847337	YES	Open	Open		OPEN	YES	
3696UB	0.556480004	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3310UA	0.658106047	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
1223	0.021740258	YES	Open	Open		OPEN	YES	
3696	0.383896255	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
3458	0.153546327	YES	C - Long Term Storage	C - Long Term Storage	Reconstruction	C - LONG TERM ST	YES	
1223UO	0.186801901	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
1223UN	0.151889889	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
1223UD	0.298326401	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
3696	0.009889839	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	YES	Reconst ruction
3458	0.00932121	YES	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	YES	
3309UA	0.06211518	YES	A - Gate	C - Long Term Storage	Reconstruction	C - LONG TERM ST	YES	Reconst ruction
3399	0.646725773	YES	Open	B - Barrier	Reconditioning	B - BARRIER	YES	Recondi tioning
1223UD	0.15533947	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
3399	0.169052471	YES	Open	B - Barrier	Reconditioning	B - BARRIER	YES	Recondi tioning
3399UD	0.627055387	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	YES	Reconst ruction
3399UA	0.043048486	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3399UB	0.041118842	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3399UA	0.377756793	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3310	0.482064721	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3723	0.74387157	NO	A - Gate	A - Gate		A - GATE	NO	
3696UA	0.595315143	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
1223UH	0.49387776	NO	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	NO	
1223UG	0.404400545	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
1231UC	1.338603123	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
1231	0.294683188	YES	B - Barrier	B - Barrier	Reconstruction	B - BARRIER	YES	Reconst ruction
3459	0.218048694	YES	C - Long Term Storage	C - Long Term Storage	Reconstruction	C - LONG TERM ST	YES	
3696UA	0.164575999	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
1223UE	0.219731953	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
1223UG	0.217650095	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	

Fallen Bear Transportation Report

RTE_NO	MILES	ALT B HAUL_RD	Existing Rx	Alt_B_RX	Alt B Const Level	ALT_C	ALTC HAUL RD	Alt C Const Level
3399	0.385703284	YES	Open	B - Barrier	Reconditioning	B - BARRIER	YES	Recondi tioning
3399	0.399794748	YES	Open	B - Barrier	Reconditioning	B - BARRIER	YES	Recondi tioning
3400	0.533166601	NO	Open	D - Decommission		D - DECOMMISSION	NO	
3400UA	0.557014321	NO	Open	D - Decommission		D - DECOMMISSION	NO	
3400	1.82680E-04	NO	Open	D - Decommission		D - DECOMMISSION	NO	
3458A	0.934223106	YES	C - Long Term Storage	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
3458	0.22694782	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	YES	
1223UZ	0.222197031	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
1223	1.685735784	NO	A - Gate	B - Barrier		C - LONG TERM ST	NO	
3681Z	0.342962314	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3696	0.234001001	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
3390	0.019988423	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3696	0.003115444	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
3696UC	0.019332106	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
1228UA	0.271569135	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
1228	1.182939575	NO	A - Gate	C - Long Term Storage		C - LONG TERM ST	NO	
3723	0.698868586	YES	A - Gate	A - Gate	Reconditioning	A - GATE	YES	Recondi tioning
1223UP	0.311133863	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
1223UQ	0.32420321	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
1223UO	0.250053141	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
3400	0.661450015	NO	Open	D - Decommission		D - DECOMMISSION	NO	
3723	1.205051835	YES	A - Gate	A - Gate	Reconditioning	A - GATE	YES	Recondi tioning
1223UB	0.600712117	NO	Open	C - Long Term Storage		C - LONG TERM ST	NO	
1223UB	0.002239653	NO	Open	D - Decommission		D - DECOMMISSION	NO	
1223UO	0.102592401	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
1223	0.728973967	YES	Open	Open	Reconditioning	OPEN	YES	Recondi tioning
1231	0.24708338	YES	B - Barrier	B - Barrier	Reconstruction	B - BARRIER	YES	Reconst ruction
1223	0.706368843	YES	Open	Open	Reconditioning	OPEN	YES	Recondi tioning
1228A	0.534731232	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
1228	0.495594844	NO	A - Gate	C - Long Term Storage		C - LONG TERM ST	NO	
1223	1.532411882	YES	A - Gate	A - Gate	Reconditioning	A - GATE	YES	Recondi tioning

Fallen Bear Transportation Report

RTE_NO	MILES	ALT B HAUL_RD	Existing Rx	Alt_B_RX	Alt B Const Level	ALT_C	ALTC HAUL RD	Alt C Const Level
3458	0.768522964	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	YES	
1223	1.41166417	NO	A - Gate	B - Barrier		C - LONG TERM ST	NO	
1223	0.015534624	NO	A - Gate	B - Barrier		C - LONG TERM ST	NO	
1223	0.015812211	NO	A - Gate	B - Barrier		C - LONG TERM ST	NO	
3696	0.257853196	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
3681UA	0.740018503	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3681Z	0.556478771	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3681UB	0.522516829	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3696UD	0.08637266	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3680	1.689696395	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
1223UE	0.820186654	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3697Z	0.85801985	YES	C - Long Term Storage	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
1228	0.527599017	NO	A - Gate	C - Long Term Storage		C - LONG TERM ST	NO	
1224	0.454023515	NO	A - Gate	C - Long Term Storage		C - LONG TERM ST	NO	
1223UC	0.598636007	NO	Open	D - Decommission		D - DECOMMISSION	NO	
1223UB	0.534191636	NO	Open	D - Decommission		D - DECOMMISSION	NO	
1223UI	0.174992718	NO	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	NO	
1223UI	0.051627471	NO	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	NO	
1223UJ	0.389331021	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
1224	0.002145898	NO	A - Gate	C - Long Term Storage		C - LONG TERM ST	NO	
1224	0.32429154	NO	A - Gate	C - Long Term Storage		C - LONG TERM ST	NO	
1224	0.688744141	NO	A - Gate	D - Decommission		D - DECOMMISSION	NO	
1223UAI	0.549342843	NO	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	NO	
1223AUB	0.155621377	NO	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	NO	
1223A	0.312801841	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
1223AUA	0.107568037	NO	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	NO	
1223A	0.003725324	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
1223	1.135909317	NO	A - Gate	B - Barrier		C - LONG TERM ST	NO	
1223UI	0.659645591	NO	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	NO	
1223	1.158841544	NO	B - Barrier	B - Barrier		C - LONG TERM ST	NO	
1223	0.01553511	NO	Open	B - Barrier		C - LONG TERM ST	NO	
1223	0.008487325	NO	Open	B - Barrier		C - LONG TERM ST	NO	
1223A	0.285745768	NO	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	NO	
1223AUA	0.262276263	NO	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	NO	
214A	0.879932963	NO	B - Barrier	B - Barrier		B - BARRIER	NO	
1223	0.048169204	NO	Open	B - Barrier		C - LONG TERM ST	NO	
214AUA	0.405842234	NO	C - Long Term Storage	C - Long Term Storage		C - LONG TERM ST	NO	
214BUA	0.308118806	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
214B	0.065982569	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	

Fallen Bear Transportation Report

RTE_NO	MILES	ALT B HAUL_RD	Existing Rx	Alt_B_RX	Alt B Const Level	ALT_C	ALTC HAUL RD	Alt C Const Level
214B	0.34612794	NO	C - Long Term Storage	D - Decommission		D - DECOMMISSION	NO	
3368	0.639246898	NO	A - Gate	D - Decommission		D - DECOMMISSION	NO	
1224UA	0.450618228	NO	A - Gate	C - Long Term Storage		C - LONG TERM ST	NO	
1224UA	0.623581467	NO	A - Gate	C - Long Term Storage		C - LONG TERM ST	NO	
1224UA	0.732249689	NO	A - Gate	D - Decommission		D - DECOMMISSION	NO	
3398	1.250518657	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
3398	0.19872833	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
1223UF	0.570282859	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
1223UF	0.382083777	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3399UC	0.767347321	NO	B - Barrier	D - Decommission		D - DECOMMISSION	NO	
3458UA	0.152108528	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3458UA	0.043486348	NO	D - Decommission	D - Decommission		D - DECOMMISSION	NO	
3309	1.332283715	YES	B - Barrier	C - Long Term Storage	Reconstruction	C - LONG TERM ST	YES	Reconst ruction
3309	0.319392901	NO	B - Barrier	C - Long Term Storage		C - LONG TERM ST	NO	
3368	0.665139939	YES	A - Gate	C - Long Term Storage	Reconstruction	C - LONG TERM ST	NO	
3368	0.105595042	NO	A - Gate	C - Long Term Storage		C - LONG TERM ST	NO	
3351A	0.306456423	YES	A - Gate	C - Long Term Storage	Reconditioning	C - LONG TERM ST	YES	Recondi tioning
3351A	0.819274951	YES	A - Gate	C - Long Term Storage	Reconditioning	C - LONG TERM ST	NO	
1231	0.487154862	YES	B - Barrier	B - Barrier	Reconstruction	B - BARRIER	YES	Reconst ruction
1231	1.068604793	YES	B - Barrier	B - Barrier	Reconstruction	B - BARRIER	NO	
3723	0.105554651	YES	A - Gate	A - Gate		A - GATE	YES	
3723	0.18245052	NO	A - Gate	A - Gate		A - GATE	NO	
3698AUA	0.124200405	YES	D - Decommission	C - Long Term Storage		D - DECOMMISSION	NO	
3698AUA	0.245460858	YES	D - Decommission	C - Long Term Storage		D - DECOMMISSION	NO	

Fallen Bear Transportation Report - Appendix C

Past, Present, and Reasonably Foreseeable Future Actions Considered for Cumulative Effects

Action	Past	Present	Future	May Have Cumulative Effects	Explanation
Timber Harvest	X				
Tree Planting	X				
Precommercial Timber Stand Improvement	X				
Mechanical or Manual Site Preparation & Fuels Treatment	X				
Prescribed Burning for Site Preparation & Fuels Treatment	X				
Prescribed Burning for Wildlife Habitat Improvement	X				
Wildfires	X		unknown		
Fire Suppression	X	X	X		
Clearing Brush and Trees to Maintain Helispots	X	X	X		
Road Construction	X		x	x	Would Add to road miles and cleared area
Road Decommissioning	X		x	x	Reduce cleared area after establishing vegetation; reduce soil compacted area
Road Maintenance	X	X	X	x	BMPs applied would reduce erosion and sediment delivery to streams
Conrad Campground	X	X	X		
Public Activities: firewood cutting, driving roads, camping, snowmobiling, hunting, hiking, berry picking, fishing, Christmas tree cutting	X	X	X		
Trail Construction	X				
Trail Maintenance	X	X	X		
Fisheries Habitat Improvement Projects	X				
Spraying Herbicides to Control and Prevent Noxious Weeds Under the St. Joe Noxious Weed EIS	X	X	X		
Outfitter and Guide Uses	X	X	X		
Large woody debris removal from Bruin Creek	X				
Flood damage & repair on Bruin Creek Road in 1997	X				
Eureka Mine hard rock mining	X				
Installing bat-friendly barrier on Eureka Mine adit to block human access for safety			X		