



Trail Design Parameters Hiker/Pedestrian (FSH 2309.18, Section 23.11, Exhibit 01)

Design Parameters are technical guidelines for the survey, design, construction, maintenance, and assessment of National Forest System trails, based on their Designed Use and Trail Class and consistent with their management intent:¹ Local deviations from any Design Parameter may be established based on trail-specific conditions, topography, or other factors, provided that the deviations are consistent with the general intent of the applicable Trail Class.

Designed Use HIKER/PEDESTRIAN	Trail Class 1	Trail Class 2	Trail Class 3 ²	Trail Class 4 ²	Trail Class 5 ²
Design Tread Width	0" – 12"	6" – 18"	12" – 24" Exception: may be 36" – 48" at steep side slopes	18" – 24" Exception: may be 36" – 48" at steep side slopes	Not applicable
Non-Wilderness (Single Lane)	0" – 12"	6" – 18"	18" – 36"	24" – 60"	36" – 72"
Non-Wilderness (Double Lane)	36"	36"	36" – 60"	48" – 72"	72" – 120"
Structures (Minimum Width)	18"	18"	18"	36"	36"
Design Surface³	Native, ungraded May be continuously rough	Native, limited grading May be continuously rough	Native, with some onsite borrow or imported material where needed for stabilization and occasional grading Intermittently rough	Native with improved sections of borrow or imported material, and routine grading Minor roughness	Likely imported material, and routine grading Uniform, firm, and stable
Protrusions	≤ 24" Likely common and continuous	≤ 6" May be common and continuous	≤ 3" May be common, not continuous	≤ 3" Uncommon, not continuous	No protrusions
Obstacles (Maximum Height)	24"	14"	10"	8"	No obstacles
Design Grade³	5% – 25%	5% – 18%	3% – 12%	2% – 10%	2% – 5%
Short Pitch Maximum	40%	35%	25%	15%	5%
Maximum Pitch Density	20% – 40% of trail	20% – 30% of trail	10% – 20% of trail	5% – 20% of trail	FSTAG: 5% – 12% ² 0% – 5% of trail

Designed Use HIKER/PEDESTRIAN		Trail Class 1	Trail Class 2	Trail Class 3 ²	Trail Class 4 ²	Trail Class 5 ²
Design Cross Slope	Target Cross Slope	Natural side slope	5% – 20%	5% – 10%	3% – 7%	2% – 3% (or crowned)
	Maximum Cross Slope	Natural side slope	25%	15%	10%	3%
Design Clearing	Height	6'	6' – 7'	7' – 8'	8' – 10'	8' – 10'
	Width	≥ 24" Some vegetation may encroach into clearing area	24" – 48" Some light vegetation may encroach into clearing area	36" – 60"	48" – 72"	60" – 72"
Design Turn	Shoulder Clearance	3" – 6"	6" – 12"	12" – 18"	12" – 18"	12" – 24"
	Radius	No minimum	2' – 3'	3' – 6'	4' – 8'	6' – 8'

¹ For definitions of Design Parameter attributes (for example, Design Tread Width and Short Pitch Maximum) see FSH 2309.18, Section 05.

² Trail Classes 3, 4, and 5, in particular, have the potential to provide accessible passage. If assessing or designing trails for accessibility, refer to the Forest Service Trail Accessibility Guidelines (FSTAG) for more specific technical provisions and tolerances (FSM 2350).

³ The determination of trail-specific Design Grade, Design Surface, and other Design Parameters should be based upon soils, hydrological conditions, use levels, erosion potential, and other factors contributing to surface stability and overall sustainability of the trail.



Trail Design Parameters

Pack and Saddle (FSH 2309.18, Section 23.12, Exhibit 01)

Design Parameters are technical guidelines for the survey, design, construction, maintenance, and assessment of National Forest System trails, based on their Designed Use and Trail Class and consistent with their management intent.¹ Local deviations from any Design Parameter may be established based on trail-specific conditions, topography, or other factors, provided that the deviations are consistent with the general intent of the applicable Trail Class.

Designed Use PACK AND SADDLE	Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5
Design Tread Width	Typically not designed or actively managed for equestrians, although use may be allowed	12" – 18" May be up to 48" along steep side slopes 48" – 60" or greater along precipices	18" – 24" May be up to 48" along steep side slopes 48" – 60" or greater along precipices	24" May be up to 48" along steep side slopes 48" – 60" or greater along precipices	Typically not designed or actively managed for equestrians, although use may be allowed
Non-Wilderness (Single Lane)	12" – 24" May be up to 48" along steep side slopes 48" – 60" or greater along precipices	18" – 48" 48" – 60" or greater along precipices	24" – 96" 48" – 60" or greater along precipices		
Non-Wilderness (Double Lane)	60"	60" – 84"	84" – 120"		
Structures (Minimum Width)	Other than bridges: 36" Bridges without handrails: 60" Bridges with handrails: 84" clear width	Other than bridges: 36" Bridges without handrails: 60" Bridges with handrails: 84" clear width	Other than bridges: 36" Bridges without handrails: 60" Bridges with handrails: 84" clear width	Other than bridges: 36" Bridges without handrails: 60" Bridges with handrails: 84" clear width	
Design Surface²	Native, with limited grading May be frequently rough	Native, with some onsite borrow or imported material where needed for stabilization and occasional grading Intermittently rough	Native, with improved sections of borrow or imported material and routine grading Minor roughness		
Protrusions	≤ 6" May be common and continuous	≤ 3" May be common, not continuous	≤ 3" May be common, not continuous	≤ 3" Uncommon, not continuous	
Obstacles (Maximum Height)	12"	6"	3"		

Designed Use PACK AND SADDLE		Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5
Design Grade²	Target Grade	Typically not designed or actively managed for equestrians, although use may be allowed	5% – 20%	3% – 12%	2% – 10%	Typically not designed or actively managed for equestrians, although use may be allowed
	Short Pitch Maximum		30%	20%	15%	
	Maximum Pitch Density		15% – 20% of trail	5% – 15% of trail	5% – 10% of trail	
Design Cross Slope	Target Cross Slope	5% – 10%	3% – 5%	3% – 5%	0% – 5%	
	Maximum Cross Slope	10%	8%	8%	5%	
Design Clearing	Height	8' – 10'	10'	10'	10' – 12'	
	Width	72"	72" – 96"	72" – 96"	96"	
	Shoulder Clearance	6" – 12" Pack clearance: 36" x 36"	12" – 18" Pack clearance: 36" x 36"	12" – 18" Pack clearance: 36" x 36"	12" – 18" Pack clearance: 36" x 36"	
Design Turn	Radius	4' – 5'	5' – 8'	5' – 8'	6' – 10'	

¹ For definitions of Design Parameter attributes (for example, Design Tread Width and Short Pitch Maximum) see FSH 2309.18, Section 05.

² The determination of trail-specific Design Grade, Design Surface, and other Design Parameters should be based upon soils, hydrological conditions, use levels, erosion potential, and other factors contributing to surface stability and overall sustainability of the trail.



Trail Design Parameters Bicycle (FSH 2309.18, Section 23.13, Exhibit 01)

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Designed Use BICYCLE	Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5
Design Tread Width	6" – 12" 36" – 48" 18"	12" – 24" 36" – 48" 18"	18" – 36" 36" – 48" 36"	24" – 48" 48" – 84" 48"	36" – 60" 72" – 120" 60"
Design Surface²	Native, ungraded May be continuously rough Sections of soft or unstable tread on grades < 5% may be common and continuous	Native, with limited grading May be continuously rough Sections of soft or unstable tread on grades < 5% may be common	Native, with some onsite borrow or imported material where needed for stabilization and occasional grading Intermittently rough Sections of soft or unstable tread on grades < 5% may be present, but not common	Native, with improved sections of borrow or imported materials and routine grading Stable, with minor roughness	Likely imported material and routine grading Uniform, firm, and stable
Protrusions	≤ 24" Likely common and continuous	≤ 6" May be common and continuous	≤ 3" May be common, but not continuous	≤ 3" Uncommon and not continuous	No protrusions
Obstacles (Maximum Height)	24"	12"	10"	8"	No obstacles
Design Grade²	5% – 20%	5% – 12%	3% – 10%	2% – 8%	2% – 5%
Short Pitch Maximum	30% 50% on downhill segments only	25% 35% on downhill segments only	15%	10%	8%
Maximum Pitch Density	20% – 30% of trail	10% – 30% of trail	10% – 20% of trail	5% – 10% of trail	0% – 5% of trail
Design Cross Slope	5% – 10%	5% – 8%	3% – 8%	3% – 5%	2% – 3%
Maximum Cross Slope	10%	10%	8%	5%	5%

Designed Use BICYCLE	Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5
Design	6'	6' - 8'	8'	8' - 9'	8' - 9'
Clearing	24" - 36" Some vegetation may encroach into clearing area	36" - 48" Some light vegetation may encroach into clearing area	60" - 72"	72" - 96"	72" - 96"
Shoulder Clearance	0" - 12"	6" - 12"	6" - 12"	6" - 18"	12" - 18"
Design Turn	2' - 3'	3' - 6'	4' - 8'	8' - 10'	8' - 12'

1 For definitions of Design Parameter attributes (for example, Design Tread Width and Short Pitch Maximum) see FSH 2309.18, Section 05.

2 The determination of trail-specific Design Grade, Design Surface, and other Design Parameters should be based upon soils, hydrological conditions, use levels, erosion potential, and other factors contributing to surface stability and overall sustainability of the trail.



Trail Design Parameters Motorcycle (FSH 2309.18, Section 23.21, Exhibit 01)

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Designed Use MOTORCYCLE		Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5			
Design Tread Width	Single Lane	Typically not designed or actively managed for motorcycles, although use may be allowed	8" – 24"	18" – 36"	24" – 48"	Typically not designed or actively managed for motorcycles, although use may be allowed			
	Double Lane		48"	48" – 60"	60" – 72"				
	Structures (Minimum Width)		36"	48"	48"				
Design Surface²	Type	Native, with limited grading May be continuously rough Sections of soft or unstable tread on grades < 5% may be common and continuous	Native, with some onsite borrow or imported material where needed for stabilization and occasional grading Intermittently rough Sections of soft or unstable tread on grades < 5% may be present	Native, with imported materials for tread stabilization likely and routine grading Minor roughness Sections of soft tread not common	Native, with imported materials for tread stabilization likely and routine grading Minor roughness Sections of soft tread not common	Native, with imported materials for tread stabilization likely and routine grading Minor roughness Sections of soft tread not common			
	Protrusions						≤ 6"	≤ 3"	≤ 3"
	Obstacles (Maximum Height)						18"	12"	3"
Design Grade²	Target Grade	10% – 25%	5% – 20%	3% – 10%	3% – 10%	10% – 20% of trail			
	Short Pitch Maximum						40%	25%	15%
	Maximum Pitch Density						20% – 40% of trail	15% – 30% of trail	10% – 20% of trail

Designed Use MOTORCYCLE		Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5
Design Cross Slope	Target Cross Slope	Typically not designed or actively managed for motorcycles, although use may be allowed	5% – 10%	5% – 8%	3% – 5%	Typically not designed or actively managed for motorcycles, although use may be allowed
	Maximum Cross Slope		15%	10%	10%	
Design Clearing	Height		6' – 7'	6' – 8'	8' – 10'	
	Width (On steep side hills, increase clearing on uphill side by 6" – 12")		36" – 48" Some light vegetation may encroach into clearing area	48" – 60"	60" – 72"	
	Shoulder Clearance		6" – 12"	12" – 18"	12" – 24"	
Design Turn	Radius		3' – 4'	4' – 6'	5' – 8'	

1 For definitions of Design Parameter attributes (for example, Design Tread Width and Short Pitch Maximum) see FSH 2309.18, Section 05.

2 The determination of trail-specific Design Grade, Design Surface, and other Design Parameters should be based upon soils, hydrological conditions, use levels, erosion potential, and other factors contributing to surface stability and overall sustainability of the trail.



Trail Design Parameters

All-Terrain Vehicle (FSH 2309.18, Section 23.22, Exhibit 01)

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Designed Use		Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5			
Design Tread Width	Single Lane	Typically not designed or actively managed for ATVs, although use may be allowed	48" – 60"	60"	60" – 72"	Typically not designed or actively managed for ATVs, although use may be allowed			
	Double Lane		96"	96" – 108"	96" – 120"				
	Structures (Minimum Width)		60"	60"	60"				
Design Surface²	Type	Native, with limited grading May be continuously rough Sections of soft or unstable tread on grades < 5% may be common and continuous	Native, with some onsite borrow or imported material where needed for stabilization and occasional grading Intermittently rough Sections of soft or unstable tread on grades < 5% may be present	Native, with imported materials for tread stabilization likely and routine grading Minor roughness Sections of soft tread uncommon	Native, with imported materials for tread stabilization likely and routine grading Minor roughness Sections of soft tread uncommon	Typically not designed or actively managed for ATVs, although use may be allowed			
	Protrusions						≤ 6"	≤ 3"	≤ 3"
	Obstacles (Maximum Height)						12"	6"	3"
Design Grade²	Target Grade	10% – 25%	5% – 15%	3% – 10%	10% – 20% of trail	Typically not designed or actively managed for ATVs, although use may be allowed			
	Short Pitch Maximum						35%	25%	15%
	Maximum Pitch Density						20% – 40% of trail	15% – 30% of trail	10% – 20% of trail

Designed Use ALL-TERRAIN VEHICLE		Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5
Design Cross Slope	Target Cross Slope	Typically not designed or actively managed for ATVs, although use may be allowed	5% – 10%	3% – 8%	3% – 5%	Typically not designed or actively managed for ATVs, although use may be allowed
	Maximum Cross Slope		15%	10%	8%	
Design Clearing	Height	6' – 7'	6' – 8'	6' – 8'	8' – 10'	
	Width (On steep side hills, increase clearing on uphill side by 6" – 12")	60"	60" – 72"	60" – 72"	72" – 96"	
	Shoulder Clearance	Some light vegetation may encroach into clearing area				
Design Turn	Shoulder Clearance	0" – 6"	6" – 12"	6" – 12"	12" – 18"	
	Radius	6' – 8'	8' – 10'	8' – 10'	8' – 12'	

1 For definitions of Design Parameter attributes (for example, Design Tread Width and Short Pitch Maximum) see FSH 2309.18, Section 05.

2 The determination of trail-specific Design Grade, Design Surface, and other Design Parameters should be based upon soils, hydrological conditions, use levels, erosion potential, and other factors contributing to surface stability and overall sustainability of the trail.



Trail Design Parameters

Four-Wheel Drive Vehicle > 50" (FSH 2309.18, Section 23.23, Exhibit 01)

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Designed Use FOUR-WHEEL DRIVE VEHICLE > 50"		Trail Class 1		Trail Class 2		Trail Class 3		Trail Class 4		Trail Class 5	
Design Tread Width	Single Lane	Typically not designed or actively managed for 4WD vehicles > 50", although use may be allowed		72" – 84"		72" – 96"		96" – 120"		Typically not designed or actively managed for 4WD vehicles > 50", although use may be allowed	
	Double Lane			16'		16'		16'			
	Structures (Minimum Width)			96"		96"		96"			
Design Surface²	Type			Native, with limited grading May be continuously rough Sections of soft or unstable tread on grades < 5% may be common and continuous		Native, with some on-site borrow or imported material where needed for stabilization and occasional grading Intermittently rough Sections of soft or unstable tread on grades < 5% may be present		Native, with imported materials for tread stabilization likely and routine grading Minor roughness Sections of soft tread uncommon			
	Protrusions			≤ 12" May be common and continuous		≤ 8" May be common and continuous		≤ 4" May be common and continuous			
Design Grade²	Obstacles (Maximum Height)			36" May be common or placed for increased challenge		24" Common and left for increased challenge		12" Uncommon			
	Target Grade			10% – 21%		5% – 18%		5% – 12%			
	Short Pitch Maximum			25%		20%		15%			
Maximum Pitch Density				20% – 30% of trail		10% – 20% of trail		5% – 10% of trail			

Designed Use FOUR-WHEEL DRIVE VEHICLE > 50"		Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5
Design Cross Slope	Target Cross Slope	Typically not designed or actively managed for 4WD vehicles > 50", although use may be allowed	8% – 15%	5% – 12%	5% – 8%	Typically not designed or actively managed for 4WD vehicles > 50", although use may be allowed
	Maximum Cross Slope		15%	12%	8%	
Design Clearing	Height	Some light vegetation may encroach into clearing area	6' – 8'	6' – 8'	8' – 10'	
	Width		72" – 84"	72" – 96"	96" – 144"	
Design Turn	Shoulder Clearance		0" – 6"	6" – 12"	12" – 18"	
	Radius		10' – 15'	15' – 20'	20' – 30'	

1 For definitions of Design Parameter attributes (for example, Design Tread Width and Short Pitch Maximum) see FSH 2309.18, Section 05.
 2 The determination of trail-specific Design Grade, Design Surface, and other Design Parameters should be based upon soils, hydrological conditions, use levels, erosion potential, and other factors contributing to surface stability and overall sustainability of the trail.



Trail Design Parameters

Cross-Country Ski (FSH 2309.18, Section 23.31, Exhibit 01)

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Designed Use CROSS-COUNTRY SKI		Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5
Design Tread Width	Single Lane	Typically not designed or actively managed for cross-country skiing, although use may be allowed	2' - 4'	6' - 8'	8' - 10'	Typically not designed or actively managed for cross-country skiing, although use may be allowed
	Double Lane		Typically not groomed	Or width of grooming equipment	Or width of grooming equipment	
	Structures (Minimum Width)		6' - 8'	8' - 12'	12' - 16'	
Design Surface ²	Type	36"	36"	36"	36"	
	Protrusions	Generally no machine grooming	May receive occasional machine grooming for snow compaction and track setting	Regular machine grooming for snow compaction and track setting		
	Obstacles (Maximum Height)	No protrusions	No protrusions	No protrusions	No protrusions	
Design Grade ²	Target Grade	12"	8"	8"	0% - 8%	
	Short Pitch Maximum	Uncommon	Uncommon (no obstacles if machine groomed)	Uncommon (no obstacles if machine groomed)	No obstacles	
	Maximum Pitch Density	5% - 15%	2% - 10%	2% - 10%	0% - 8%	
Design Cross Slope	Target Cross Slope	25%	20%	20%	12%	
	Maximum Cross Slope (For up to 50')	10% - 20% of trail	5% - 15% of trail	5% - 15% of trail	0% - 10% of trail	
		0% - 10%	0% - 5%	0% - 5%	0% - 5%	
		20%	15%	15%	10%	

Designed Use CROSS-COUNTRY SKI		Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5
Design Clearing	Height (Above normal maximum snow level)	Typically not designed or actively managed for cross-country skiing, although use may be allowed	6' – 8'	8'	8' – 10'	Typically not designed or actively managed for cross-country skiing, although use may be allowed
	Width		24" – 60" Light vegetation may encroach into clearing area	72" – 120" Light vegetation may encroach into clearing area	96" – 168" Widen clearing at turns or if increased sight distance needed	
Design Turn	Shoulder Clearance	0" – 6"	0" – 12"	0" – 24"		
	Radius	8' – 10'	15' – 20'	Or to accommodate grooming equipment	≥ 25'	

1 For definitions of Design Parameter attributes (for example, Design Tread Width and Short Pitch Maximum) see FSH 2309.18, Section 05.

2 The determination of trail-specific Design Grade, Design Surface, and other Design Parameters should be based upon soils, hydrological conditions, use levels, erosion potential, and other factors contributing to surface stability and overall sustainability of the trail.



Trail Design Parameters Snowshoe (FSH 2309.18, Section 23.32, Exhibit 01)

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Designed Use SNOWSHOE		Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5
Design Tread Width	Single Lane	Typically not designed or actively managed for snowshoe, although use may be allowed	36"	36" – 48"	36" – 60"	Typically not designed or actively managed for snowshoe, although use may be allowed
	Double Lane		60"	72"	72" – 96"	
	Structures (Minimum Width)		36"	48"	48"	
Design Surface ²	Type	Generally no machine grooming	May receive occasional machine grooming for snow compaction	Likely to receive occasional machine grooming for snow compaction		
	Protrusions	No protrusions	No protrusions	No protrusions	No protrusions	
Design Grade ²	Obstacles (Maximum Height)	12" Uncommon	8" Uncommon (no obstacles if machine groomed)	No obstacles	No obstacles	
	Target Grade	10% – 20%	5% – 15%	0% – 10%	0% – 10%	
	Short Pitch Maximum Maximum Pitch Density	30% 5% – 20% of trail	20% 5% – 25% of trail	15% 0% – 5%	15% 0% – 10% of trail	
Design Cross Slope	Target Cross Slope	0% – 10%	0% – 5%	0% – 5%	0% – 5%	
	Maximum Cross Slope	20%	15%	10%	10%	

Designed Use SNOWSHOE		Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5
Design Clearing	Height (Above normal maximum snow level)	Typically not designed or actively managed for snowshoe, although use may be allowed	6' – 8'	8'	8' – 10'	Typically not designed or actively managed for snowshoe, although use may be allowed
	Width		48" Some light vegetation may encroach into clearing area	72" Light vegetation may encroach into clearing area	72" – 96"	
Design Turn	Shoulder Clearance	0"	0"	12"	12" – 24"	Or to accommodate grooming equipment
	Radius	3' – 4'	3' – 6'	3' – 6'	4' – 8'	

1 For definitions of Design Parameter attributes (for example, Design Tread Width and Short Pitch Maximum) see FSH 2309.18, Section 05.
 2 The determination of trail-specific Design Grade, Design Surface, and other Design Parameters should be based upon soils, hydrological conditions, use levels, erosion potential, and other factors contributing to surface stability and overall sustainability of the trail.



Trail Design Parameters

Snowmobile (FSH 2309.18, Section 23.33, Exhibit 01)

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Designed Use SNOWMOBILE	Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5
Design Tread Width	Typically not designed or actively managed for snowmobiles, although use may be allowed	4' - 6' Typically not groomed	6' - 8' Or width of grooming equipment On turns with tight radius, increase groomed width to ≥ 10'	8' - 10' Or minimum width of grooming equipment On turns with tight radius, increase groomed width to ≥ 12'	Typically not designed or actively managed for snowmobiles, although use may be allowed
Double Lane	10'	10'	10' - 12'	12' - 20'	
Structures (Minimum Width)	6'	Typically not groomed	12'	18'	
Design Surface²		Generally no machine grooming Commonly rough and bumpy	May receive occasional machine grooming for snow compaction and conditioning Frequently rough and bumpy	Regular machine grooming for snow compaction and conditioning Commonly smooth	
Protrusions	No protrusions	No protrusions	No protrusions	No protrusions	
Obstacles (Maximum Height)	12" Uncommon	Uncommon	6" Uncommon (no obstacles if machine groomed)	No obstacles	
Design Grade²		0% - 12%	0% - 10%	0% - 8%	
Short Pitch Maximum		35%	25%	20%	
Maximum Pitch Density		15% - 30% of trail	10% - 20% of trail	5% - 10% of trail	

Designed Use SNOWMOBILE		Trail Class 1	Trail Class 2	Trail Class 3	Trail Class 4	Trail Class 5	
Design Cross Slope	Target Cross Slope	Typically not designed or actively managed for snowmobiles, although use may be allowed	0% – 10%	0% – 5%	0%	Typically not designed or actively managed for snowmobiles, although use may be allowed	
	Maximum Cross Slope		15%	10%	5%		
Design Clearing	Height (Above normal maximum snow level)	6'	6' – 8'	Provide sufficient clearance for grooming equipment	8' – 12'	Provide sufficient clearance for grooming equipment	
	Width	6' – 12'	8' – 14'	Light vegetation may encroach into clearing area	10' – 22'		Widen clearing at turns or if increased sight distance needed
	Shoulder Clearance	6" – 12"	12" – 18"		12" – 24"		
Design Turn	Radius	8' – 10'	15' – 20'	Or sufficient radius for grooming equipment	25' – 50'		

¹ For definitions of Design Parameter attributes (for example, Design Tread Width and Short Pitch Maximum) see FSH 2309.18, Section 05.

² The determination of trail-specific Design Grade, Design Surface, and other Design Parameters should be based upon soils, hydrological conditions, use levels, erosion potential, and other factors contributing to surface stability and overall sustainability of the trail.