

# HMA IS SUPERIOR ALONG THE NORTH SHORE!

From Duluth to Grand Marais, the north shore of Lake Superior has been one of Minnesota's most popular tourist spots. For leisure activities and healthful pursuits such as hiking, walking, cycling, and in-line skating, the smoothness and durability of hot mix asphalt (HMA) trails have allowed many to enjoy the scenic route separate from the traffic on Highway 61. The planned 85-mile Gitchi-Gami State Trail connecting Two Harbors and Grand Marais is scheduled to be completed in phases over the next 8 years (see the website [www.gitichigamitrail.com](http://www.gitichigamitrail.com) for more information on the trail).



*Recreational trail in Duluth (left) and Beaver Bay (right).*

The Minnesota Department of Natural Resources lists the locations of Minnesota trails on their website ([www.dnr.state.mn.us](http://www.dnr.state.mn.us)). Minnesota state bicycle trails are best suited to people with physical disabilities, because most trail surfaces are paved asphalt and are 8 to 12 feet wide. There are several other advantages to using HMA for recreational trails including the lowest initial and future maintenance costs, no curing time is required, the ease of construction provides rapid access to users of the facility. Aesthetically, HMA is a flexible pavement that is designed to conform to the rolling terrain with a smooth surface, and the black color of HMA enhances the green surroundings.

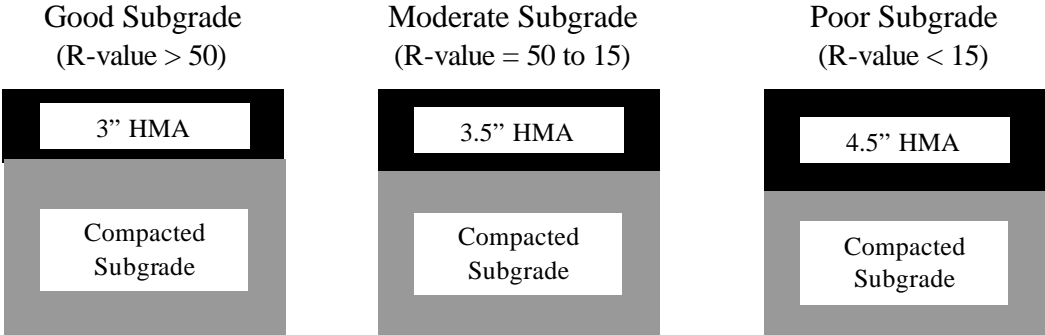


*Recently completed Gitchi-Gami State Trail near Beaver Bay.*

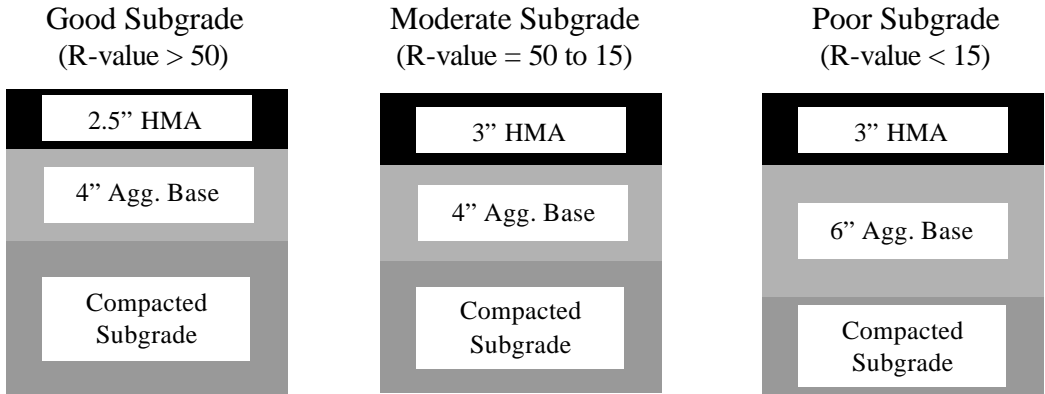
*Black enhances green.*

Good design, materials selection, and construction practices help to preserve long-term pavement performance. Drainage should be carefully designed and installed as early in the construction process as practical. The subgrade must serve both as the working platform to support construction equipment and as the foundation for the pavement structure, it is vital to ensure that the subgrade is properly compacted and graded. The thickness of the specified pavement layers vary with subgrade strength and expected loading. The following recommendations are for bikeways, golf cart paths, recreational trails, and walkways with minimal heavy traffic loads. The first lift of HMA should be placed directly on the prepared subgrade or aggregate base layer, spread and compacted. Compaction is one of the most important construction operations in terms of its contribution to the performance of the completed pavement. More information regarding the design and construction of HMA ranging from recreational uses to highways can be found on-line in the MAPA Asphalt Paving Design Guide at [www.asphaltisbest.com](http://www.asphaltisbest.com).

**Recommended Pavement Layer Thicknesses for Recreational Areas  
(Full Depth Hot Mix Asphalt)**



**Recommended Pavement Layer Thicknesses for Recreational Areas  
(Hot Mix Asphalt over Aggregate Base)**



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