



All-Terrain Vehicle Use on the North Shore State Trail: A Feasibility Study

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Minnesota Session Laws 2005,
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Chapter 1, Article 2, Section 3,
Subdivision 6*



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**State of Minnesota
Department of
Natural Resources**

EXECUTIVE SUMMARY

Scope. This study examines the physical capacity of the North Shore State Trail (hereafter NSST) to accommodate summer-season ATV use based upon a corridor inspection and technical analysis. This analysis, conducted in conjunction with county and federal land managers, describes surface water and wetland conditions, road and trail transportation systems, corridor use, and land ownership. The intent is to determine which segments of the existing trail are capable of sustaining ATV travel either as is, or with modification, and to estimate the cost of necessary modifications.

Certain development standards, or guidelines, are necessary in order to accommodate ATV use. Trail development standards have evolved, and continue to evolve, as the DNR gains experience with ATV trail development and maintenance. In this case, experience with the Moosewalk/Mooserun, and Red Dot GIA ATV trails located near Finland, Minnesota are particularly instructive.

Methodology. DNR staff conducted a detailed corridor inspection of the NSST during the summer and fall of 2005. Data collected in conjunction with the 2003-04 GIA proposal from the North Shore ATV Club was also used in this analysis. A Geographic Positioning System (GPS) unit was used to collect data points to record the location of specific features such as culverts; bridges; steep hills; intersections with other trails or roads; and spots requiring treadway stabilization in the form of added fill material or ditching in order to accommodate ATV use. A DNR interdisciplinary team has reviewed all of the data. Additional data was provided by cooperating agencies, including the United States Forest Service, St. Louis, Lake and Cook Counties.

For the purposes of this analysis, the entire trail (approximately 143 miles) was divided into 11 sections based primarily upon jurisdictional boundaries and existing access points, such as parking lots and road crossings. These sections, which are of varied lengths, are arbitrary distinctions and should not be viewed as independent or mutually exclusive, but simply as analysis units intended to facilitate review.

Findings. Land ownership is a critical factor concerning any change in trail use to the NSST, since the majority of the trail corridor is not presently state-owned. Affected landowners need to be informed, involved and included in any discussions concerning proposed use of their land. The DNR holds a variety of easements and landowner agreements to allow the NSST to cross non-DNR property. Each of these agreements would need to be revisited before ATV use could be added to the current recreational mix. Landowner support or opposition for ATV use would play a key role in future planning and decision making for the NSST.

The principal environmental concern regarding ATV use on the NSST is potential impacts to surface waters and wetlands, notably the many protected waters crossed by the trail. Of special concern are designated trout streams and their tributaries, and protected wetlands. Summer-season ATV impacts pose a greater risk to these sensitive resources than those generated by all current uses of the North Shore State Trail. This is because of unfrozen soil conditions, and due to the mechanical soil disturbance characteristic of vehicular travel over natural surfaces.

This study finds that the NSST could be capable of sustaining ATV traffic, but modifications would be required throughout the entire length of the trail. These projected modifications range from extraordinary measures to minor alterations. No significant portion of the trail corridor, aside from

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the 6.4 miles already designated open to ATV use, could sustain ATV use in its current condition. Table 1, below, provides construction cost estimates for projected modifications. This cost summary does not include administrative costs.

Areas requiring ‘extraordinary measures’ to accommodate ATV traffic are those areas that would need lengthy reroutes and/or wetland mitigation measures, in addition to substantial treadway alterations. Although portions of the trail have been previously modified by adding fill in wetland areas, there are many other areas not previously modified, which would now require mitigation.

Table 1. Cost Estimate Summary for Projected Modifications.*

Section	Culvert Installation	Culvert Purchase	Hill Modifications	Treadway Stabilization	Wetland Mitigation-Cost	Estimated Total
1	15,300	7,200	5,300	75,100	\$39,600 (approx. 3.0 Acres)	\$142,500
2	4,500	2,100	20,900	8,100	-	\$35,600
3	1,800	900	2,500	13,600	\$1,400 (approx. 0.11 Acres)	\$20,200
4	13,200	6,300	2,100	56,200	\$42,700 (approx. 3.26 Acres)	\$120,500
5	11,400	5,400	13,700	7,200	\$3,500 (approx. 0.27 Acres)	\$41,200
6	-	-	-	-	-	0
7	8,100	3,800	36,500	26,900	-	\$75,300
8	9,000	4,300	9,100	32,900	-	\$55,300
9	11,100	5,300	16,000	9,300	-	\$41,700
10	6,000	2,800	6,300	7,100	-	\$22,200
11	2,400	1,100	14,200	4,800	-	\$22,500
Est. Sub Totals	\$82,800	\$39,200	\$126,600	\$241,200	\$87,200	\$577,000

* Cost estimates may change considerably depending on specifications of an actual project. Further cost analysis is included for each identified section of trail to provide a better understanding of how these costs are associated to the trail. Estimates have been rounded for reporting purposes.

Source: MN DNR, Unpublished data. February 2006.

The potential for conflict or unintended intrusion effects is greatest where the trail is located in close proximity to relatively high-density residential populations or sections of the trail that are more heavily used during the non-snow seasons, such as where the trail is shared by the Superior Hiking Trail. This analysis concludes that little trail user conflict would likely result from the addition of ATVs during the non-snow seasons, given current low-levels of summer use.

Any significant change in the current use profile, such as ATV use, will trigger various administrative steps, which take time to complete and involve substantial cost. For example, landowners would need to be notified, and many trail corridor easements and other agreements would need to be renegotiated for those trail segments that do not currently host ATV traffic. Project environmental review, permitting, and a North Shore State Trail Master Plan amendment would also need to be completed prior to authorizing ATV use, requiring substantial staffing resources. Increased annual maintenance, operations and enforcement costs must also be factored into the estimated costs of any future ATV project proposal.

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Conclusion. Based upon this examination, it is clear that ATV traffic cannot be sustained on all or portions of the North Shore State Trail in its present condition, except for the 6.4-mile segment already designated for ATV use. Substantial improvement and modification would be necessary to avoid, minimize, and to mitigate environmental effects stemming from summer ATV use. Before such modifications could occur, however, additional planning and environmental review would be required. Consultation with landowners, local governments and cooperating land-managing agencies would also be in order.