

**State of Minnesota
DEPARTMENT OF NATURAL RESOURCES
Division of Waters**

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Subject: *Virginia OHV Recreation Area
Riparian Area Assessment*

I. RESOURCE DESCRIPTION

General Description of Site

This proposed OHV site occurs in two watersheds: Pike River watershed on the east and East Two Rivers River watershed on the west. This proposed site is a total of about 4.4 square miles. It encompasses about 6.25 sq. mi. with the center 1.9 sq. mi. excluded; this central area includes St. Louis County landfill. The west and part of the south and north sides of the proposed site have been impacted by mining. The east part of this proposed site has been relatively undisturbed and has relief up to 150-feet.

Water Courses

Pike River and two unnamed tributaries to Pike River are classified protected waters. Pike River headwaters on this proposed Virginia OHV site in the northwest corner of Sec.23, T.58N., R.17W. (58-17) and flows through the center of Sec.14, 58-17 from south to north-northeast and then through the southeast corner of Sec.11, 58-17 and then further to the northeast.

One unnamed tributary to Pike River that's classified protected waters flows from southwest to east to about the center of Sec.14, 58-17 and it's confluence with Pike River. The other unnamed tributary to Pike River that's classified protected waters flows from north to south about on the east section line of Sec.11, 58-17, to it's confluence with Pike River.

There are three other unnamed tributaries to Pike River that are not classified protected however they flow into the unnamed tributaries protected waters described above. These tributaries, as well as those outlined above, are on the U.S.G.S. topographic 7.5 minute quadrangle maps. NOTE: Pike River and the two unnamed tributaries are mapped and classified as 'Tributary'.

Watersheds

The major Laurentian Watershed Divide splits this proposed OHV site. In the eastern half, Pike River flows north, eventually to Rainy River and Hudson Bay. The western half flows west into the mine pits and south into East Two Rivers River, then into St. Louis River and Lake Superior, and St. Lawrence Seaway - Atlantic Ocean.

The eastern half of the proposed OHV site occurs in the very headwaters of the Pike River which constitutes a significant portion of the watershed of Lake Vermilion (#69-0378). Pike River watershed (122,745 acres) equals about 39-percent of the total watershed of Lake Vermilion (313,540 acres). Sandy River, a tributary to Pike River, and its watershed, constitutes about one-third of the total Pike River watershed and is north and west of these on-site very headwaters.

The western half of the proposed OHV site occurs in the very headwaters of East Two Rivers River which then flows into St. Louis River. Some runoff drains via ditches either south and around Virginia into the tributary of Manganika Lake (#69-0726P) or flows through Virginia and into Silver Creek to the west and south into East Two Rivers River.

Water Basins

There are no open water basins that are classified protected waters within the proposed Virginia OHV recreation area. It's possible that small, unnamed open water basins occur, perhaps some at the edge or toe of the area impacted by mining. And some of these ponds have most likely been influenced by mining activity, either enlarged or reduced in size, or even created by mining. Bluffs and steep slopes are of concern, especially where they drain into water resources. This concern is due to the potential for soil erosion and sedimentation to occur and the concern for soil integrity.

Mine Pits

The city of Virginia obtains its public water supply from the Richeleau Pit, which is located on the west boundary of this OHV area. Water levels will continue to rise in these pits until it stabilizes. Depending on the elevation of the final water level, some of the pits may become interconnected and/ or have outlet on the surface. A water balance study is currently underway for abandoned mine pits in Coleraine. Results of this study will hopefully facilitate management of all other abandoned mine pits.

Other

There are other streams on-site, some of which are distinguishable on air photos. See the Wetland Section for a discussion of the wetlands on-site. Water basins, water courses and wetland areas all provide wildlife and fish habitat and all require appropriate consideration and protection during site design and operation.

II. DISCUSSION

Riparian Areas

Riparian areas, or upland surrounding lakes, ponds, wetlands, and streams, provide physical and biological treatment of runoff flowing on the surface and downslope into the water body. In these riparian areas, runoff is physically filtered and, when absorbed into the ground, it is chemically changed by uptake by roots and other reactions in the soil. For these reasons, healthy and adequate riparian areas are important to maintaining water quality and the integrity of the associated ecosystems. Riparian areas are especially important to maintaining high quality lake and stream systems which do not enjoy as wide a fringe of hydrophytic, or water-tolerant, vegetation, such as wetlands.

State Shoreland Rules

Minimum statewide shoreland rules reflect the value of this riparian area in at least *five* separate standards relevant to this proposed recreation area. *First*, the minimum structure setback for streams classified as *'Tributary'* is 75 feet. *Second*, the *Shore Impact Zone* is defined to be one-half of the structure setback, or 37.5' adjacent to *Tributary Steams*. Landowners must maintain the the integrity of the Shore Impact Zone and minimize disturbance to this area. *Third*, driveways, roads and parking areas must meet structure setbacks and must not be placed within bluff or shore impact zones when other placement alternatives exist. If no feasible alternatives exist, these facilities may be placed within setback areas, but they must be carefully designed to minimize adverse impacts.

Fourth, land uses that are not water-dependent should be located away from public waters frontage. If located on parcels with public frontage, such uses must be set back double the ordinary high-water level setback, or be screened from view (from the water) by vegetation or topography. *Fifth*, structures must be set back 30 feet from the tops of bluffs. Since OHV activity is not specifically water-related; the suggested structural setback is 150 feet.

State Shoreland Rules define bluffs and steep slopes as having average gradients of greater than 30 percent and 12 percent, respectively, and draining toward the protected water body. Bluffs rising more than 25 feet above the ordinary high-water level are of special concern due to potential soil instability, soil erosion and sedimentation that could threaten water quality or the integrity of poorly designed structures.

Portions of this project area lie within the city limits of either Gilbert and/or Virginia. While Gilbert has adopted a shoreland zoning ordinance, the city of Virginia has not. And, while the State of Minnesota is **not required** to obtain local approval for the management of state lands, it is Departmental policy that DNR activities conform with local government ordinances whenever possible. The DNR will meet or exceed standards contained in the statewide shoreland zoning ordinance at both Gilbert and Virginia.

III. RESOURCE MANAGEMENT OBJECTIVES

Maintain or enhance water quality and flow characteristics of water resources, especially for the Pike River and two unnamed tributaries which are classified as 'State Protected Waters'.

IV. ISSUES AND CONCERNS

Sedimentation

The primary threat to water quality is sedimentation, which can result from poor trail design, construction, operations and/or maintenance. Also critical to minimizing sedimentation is confining traffic to designated trails and open use areas. Uncontrolled or unauthorized use of the site could trigger soil erosion from sensitive areas. Depending upon soils, vegetation and moisture conditions, trails have the potential to obstruct water flow due to soil compaction, rutting or other physical damage. Such blockages could result in flooding and/or water quality problems, especially in conjunction with major rainfall or snowmelt events.

Contamination

Other water quality threats could result from improper fuel and oil handling, vehicle wash stations, scramble areas, mud areas, unauthorized off-trail travel, special events or competitive

events. Water quality considerations must be an integral part of the planing, design and day-to-day operation of this OHV facility.

V. IMPACT AVOIDANCE, MINIMIZATION, AND MITIGATION STRATEGIES

Design, install, operate, monitor and maintain OHV trails to protect and maintain water quality and surface hydrology. Maintain vegetated filter strips, stable soils and slopes, and the integrity of the Shore Impact Zone along all lakes, streams, and wetlands. Avoid crossing water resources; and when not possible, minimize the size and number of such crossings. Typically, bridges are preferred to culvert crossings. Design all such crossings to minimize disturbance; for example, cross the water body at the narrowest width and at right angles.

Employ drainage and runoff management techniques including water diversions, sediment basins, erosion controls and other features to prevent soil erosion and sedimentation. Consider soil, vegetation and soil moisture conditions when designing and locating trails to avoid soil compaction and rutting which could impede natural flow conditions. Field check proposed trail locations and modify final location and designs appropriately to reflect actual site conditions. Consider soil integrity, along with other indicators, in gauging the appropriate use level and longevity of trails, and in determining intervals between major restoration events.

Maintain trails and all development features at a setback of 150 feet from all protected waters. Where no feasible placement alternative exists, maintaining as sizable a setback distance as possible and enhance the vegetative filter. Maintain stable, healthy, and adequately vegetated riparian areas around **all** water resources, especially adjacent to the Pike River and its' unnamed tributaries. Consider limiting access to picnic sites, overlooks, or other areas adjacent to water bodies, especially State Protected Waters, to footpaths landscaped to prohibit vehicular access. Stormwater and erosion control devices should also be installed wherever necessary.

Design and install adequate runoff management measures, which includes devices for handling stormwater for the entire facility. Sedimentation basins should be appropriately sized and located. Obtain a protected waters permit (from DNR, Div. of Waters) for any alteration of protected waters below the ordinary high water level. Obtain federal and state approvals and permits as necessary. [See list of contacts below]. A Minnesota Pollution Control Agency (MPCA) general National Pollutant Discharge Elimination System (NPDES) permit may be required for the discharge of storm water during the construction phase, as well as industrial storm water during regular operation of this facility. Land disturbance of five acres or more during construction, or on-going land disturbance activities triggers this NPDES permit. Depending upon the final development plan, a wetlands permit from U.S. Army Corps of Engineers may also be necessary to develop this site.

VI. REFERENCES

1. *Statewide Standards for Management of Shoreland Areas, MN DNR, Div. Of Waters, 5/89.*

CONTACTS:

Local Unit of Government:

- City of Virginia, Planning & Zoning Administrator.
- St. Louis County Zoning Administrator, John Jubala at 218/725-5000.

Stormwater Run-off Management:

- Duluth MPCA, John Thomas at 218/723-4928.
- St. Paul MPCA, Dann White at 651/296-7237.

Wetlands:

- Tim Peterson, US Army Corps of Engineers at 218/834-6630, Two Harbors.
- Wetland mitigation Issues: MPCA contact is Larry Zdon at 651/297-8219, St. Paul.
- Wetlands Conservation Act Administrator, Virginia P&Z Administrator; and Mark Lindhorst, North St. Louis Soil & Water Conservation District at 218/741-3230.

Solid and Hazardous Waste Management:

- Dan Logelin at 218/723-4710 and Heidi Kroening at 218/723-4795, MPCA, Duluth.

Mining-Related Issues:

- MPCA staff Jim Strudell at 651/296-7238, St. Paul.
- MPCA staff Heidi Bauman (218/723-4660, Duluth).

Dust Control:

- Bob Beresford at 218/723-4664, MPCA, Duluth.

Noise Control:

- Brian Timerson @ 651/296-7898, Noise Program Coordinator, MPCA Air Quality Division, St. Paul.

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