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ACCESS FOR ALL

A Workbook For Outdoor Accessibility

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nesota Department of Natural Resources

ACCESS FOR ALL



Minnesota Department of Natural Resources

SALL COMMINNESOTA

Cooperative Efforts of:

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INTRODUCTION

The concerns of the accessibility program to special populations have become a humanistic approach: Individuals should have available to them numerous recreational choices. The Minnesota Department of Natural Resource's challenge, then, lies in providing physical accessibility and program useability, assuring the freedom of recreation, education and park use to everyone, not only persons with various disabilities and the elderly.

Within the realms of preserving our natural resources, this challenge is being addressed.

State and Federal legislation has been passed to guarantee facilities and programs equally accessible and useable to special populations. Such legislation includes the Minnesota Architectural Barriers Act, Federal Architectural Barriers Act, and Section 504 of the Rehabilitation Act. The National Forum on Meeting the Recreation and Park Needs of Handicapped People also states: "All disabled citizens, each according to their individual ability, shall be guaranteed access to recreation programs, activities, and/or facilities which are held forth to be 'public'".

This manual is to provide assistance throughout the process of obtaining physical accessibility within Minnesota's state parks and other state lands. It is imperative to remember that the physical access of an area is simply one aspect of providing opportunities to all persons. It is an ongoing process inclusive of attitudes, awareness, elimination of physical barriers, and education and recreation programing.

The outdoor recreation standards set forth in this manual are presented in a working format, addressing the needs which have surfaced throughout Minnesota. The standards are to address each park and land situation independently. These standards will be revised in accordance with field personnel and user recommendations, considering necessary user and regional needs.

The Minnesota Department of Natural Resources will therefore extend their dissemination of information efforts, to give potential users information on those programs and facilities which are available to all persons, including special populations.

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Definition of Special Populations

Persons who, through congenital defect, disease, infection, cultural or environmental deprivation, or by accident, have lost the use of some part of their bodies or some of their sensory facilities. (Beechel, J. 1975. Interpretation for Handicapped Person.)

Including persons who have or are:

- blind or visually impaired
- deaf or hard of hearing
- mentally impaired
- physically disabled
- respiratory ailments
- elderly who have limited mobility, agility or stamina
- arthritis
- chemically dependent
- juvenile delinquent
- chronically ill
- disadvantaged
- minorities

Approximately 14.5 percent of Minnesota's population has chronic or permanent functional impairments. Remember: There are several disabled persons that, either independently or with assistance, are capable of engaging in any opportunity or activities that are safe to any park user or visitor.

Minnesota's Department of Natural Resources Accessibility Guideline

With the implementation of the Outdoor Recreation Act of 1975, a guideline for the development of outdoor accessibility states:

Within natural resource preservation and economic limitations, it is MDNR's goal to provide recreational opportunities for all persons within the state. However, topographic relief in some units may require extensive systems of "switchbacks" and hard surfacing - thereby destroying the natural atmosphere for which the unit was established. Therefore, the MDNR will concentrate its efforts upon providing physical accessibility and program useability in areas which have the most potential for utilization by persons with disabilities. Keeping in mind the potential of providing the full range of recreational opportunities to all individuals, a systematic approach within the selected units will be followed in order to eliminate physical barriers to disabled persons.

All future state and other state park facilities will be physically accessible and in compliance with Minnesota's Unified State Building Code, Chapter 55. An attempt will be made to upgrade existing state park facilities for better physical accessibility and program useability to all individuals, including persons with disabilities, where it is not detrimental to the natural resources

The MDNR will seek recommendations and suggestions from users and visitors to assist in the broadening of outdoor recreation and education opportunities to all persons.

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Minnesota's Department of Natural Resources Stages of Outdoor Physical Accessibility

Following the development of the accessibility program and the DNR guideline, stages of physical accessibility have been established that are to be developed in sequence as accessibility progresses within each of Minnesota's state parks and other state lands. The stages of development for physical accessibility are:

Stage I:

Providing accessibility in and between the picnic areas, campground areas, and other major facilities of the specific area, such as fishing, sanitation buildings and interpretive centers. This includes <u>interior</u> and <u>exterior</u> accessibility for the major facilities. It is essential that accessible pathways connect these major areas. Upon securing this stage, the accessibility within the area will be reviewed by disabled persons and MDNR's accessibility program specialist, at which point the area would be eligible to publicly display and use the International Wheelchair Symbol of Accessibility, if they choose to do so. (Refer to signing section).

Stage II:

Provides physical accessibility, as deemed feasible, to as many unique features as possible. The unique features will vary depending on the major emphasis within each park or specific area. It is recommended that at least one accessible nature trail of approximately one mile in length, be considered a special feature in state parks, where practical and within limitations of the resources available. Each area and facility should be considered as unique entities.

Stage III:

Most features will provide physical accessibility to all persons with various disabilities. Thus, Stage III accessibility would be subject to the limits of available resources. This, however, will be one of the many objectives considered in the planning, implementing, and rehabilitation of all state areas.

Specifications Relating to Individuals in Wheelchairs and/or Crutches

Wheelchair Specifications (Refer to Graphics)

The collapsible model wheelchair of tubular metal construction with plastic upholstery for back and seat is the type most commonly used. The standard adult model of each manufacturer falls within the specifications shown in graphics. Wheelchair specifications will vary according to the individuals body structure. For the present time we will refer to the specifications stated in this manual as standard measures.

The specifications for the functioning of a wheelchair and for an adult individual functioning within a wheelchair are shown in the following graphics. The size, strength, range of motion, degree of involvement, and reaching lengths will vary from one individual to another. The specifications shown in the graphics were established using a large number of individuals with a wide range of size and involvement.

The Adult Individual Functioning on Crutches

Individuals who use walking aids such as braces, crutches, or canes are able to operate within the specifications prescribed for wheelchairs. It should be noted that a crutch tip extending laterally from an individual is not as obvious to others in heavily trafficked areas as is a wheelchair and therefore may be a source of vulnerability.

On the average, individuals 5' - 6' tall require an average of 31 inches between crutch tips in the normally accepted gaits.

On the average, individuals 6' - 0" tall require an average of 32.5 inches between crutch tips in the normally accepted gaits.

Based on the previous category definitions and requirements, the following standards have been compiled and formulated for use in recreational and open space design.







Site Design Specifications and Recommendations

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The following section will deal with various aspects of site design. Emphasis is placed on the flow patterns and relationships which occur between users and the natural resources.

1



Parking Lots

- There are to be two (2) parking spaces per every fifty (50) to be signed for handicapped accessibility to serve individuals with a physical disability.
- All accessible parking spaces should be 12 15 feet in width to provide space to unfold wheelchairs or manipulate other orthopedic devices next to the car (refer to graphics).
- 3. The location of the parking stalls should be placed to the outside of the lot so that the individuals using wheelchairs or walking aids would not have to move through traffic.
- 4. Parking lot access walks should lead to and from the parking lot being on the same level or ramped according to specified standards (refer to graphics). Ramps must not have a slope greater than 1:12 (one foot or rise in 12 feet or run), or 8.33 percent which is 4 degrees 50 minutes. The width must be at least 4 feet, not more than 4 inches of which may be occupied on each side by a handrail. All slopes exceeding 1:15 shall be provided with handrails on both sides.



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Facility Related Specifications

Facilities

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- 1. Accessible buildings shall include sanitation building, concession building, picnic shelters, visitor centers, etc.
- 2. As many existing buildings as are feasible will be upgraded to become accessible for persons with disabilities, according to the Minnesota Unified State Building Code, Chapter 55. If these buildings cannot be remodeled to be made accessible due to physical, economic or topographic limitations, upgrading will be done as is possible to provide the maximum stage of accessibility.
- 3. All future building facilities will be in compliance with the Minnesota State Building Code, Chapter 55.
- 4. If buildings are accessible in the interior (either part or whole), the exterior accesses are required to be accessible.
- 5. Building access shall be grade level entrances with minimum door width of 32 inches and a lightweight door is preferred. Ramps shall provide access to buildings and facilities entrances only where topography and existing nature of structure preclude grade level approach. (Refer to graphic).
- 6. Accessible sanitation buildings and vault toilets will be provided whenever possible in areas that are otherwise accessible to persons with disabilities. The toilet designs will be in accordance with the MDNR Bureau of Engineering specifications.

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Utility Related Specifications

Telephones

Most existing telephone booths cannot be utilized by the individual with a disability. Installation of an accessible telephone is the responsibility of the telephone company. A graphic of an accessible telephone has been included in this manual if needed.

Electrical Power

Electrical outlets should be at least 18 inches off the ground and should be no higher than 48 inches if they are to be reached by people in wheelchairs.

Water Fountains

Water fountains which facilitate the person with a physical disability should have upfront spouts and controls which can be hand or hand and foot operated. Refer to the graphics and the DNR Bureau of Engineering for accessible specifications relating to water fountains and water spouts.

Sanitation Building/Vault Toilets

Refer to graphics.









Signing of Physical Accessibility (Refer to graphics)

This section is written to relate to park situations but can be modified for other MDNR situations, i.e., public accesses, hunting areas.

- 1. A main International Wheelchair Access Symbol (metal or wood routed) will be attached to the contact station or location close to contact station where it is clearly visible. This will be obtained and displayed upon reaching Stage I accessibility.
- 2. As specific areas become accessible, such as picnic areas, a small sign (decal) is to be attached below the main accessibility sign, thus indicating accessibility to that facility. An example of this might be a picnic table graphic routed into wood to denote accessibility.
- 3. It will then be the responsibility of the user (disabled person, elderly, etc.) to inquire of the park manager (or the person at the contact station) as to how accessible these areas are, and the locations of the accessible areas.
- 4. The access signs will become part of the MDNR sign manual and a system will be designed where as signs and decals can be ordered through the service centers. Accessible areas must be approved by the program coordinator.
- 5. Graphic signs are important wherever possible. Also, for the blind and visually impaired, it is recommended to use large lettering or characters, that is raised or recessed from its backing.
- 6. The various sign mounts will be determined according to each specific situation.

Handicapped Sign Specifications

Aluminum handicapped sign, permitted use blanks and permitted use decals to be ordered by a Form A-19 and processed through normal purchasing channels.

Metal signs are to be mounted onto $\frac{1}{2}$ " AC exterior plywood or available material, with 3/8 x 1" cadminum plated bolts.

Edges of sign are to be flood coated with penta preservative. Front and back of sign to be stained with Olympic Latex Stain, Oxford Brown.

Edges of plywood to be finished with aluminum "U" channel sections $(\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}")$, corners could be mitred. Aluminum edge sections to be fastened to plywood by nails or adhesive. If nailed, pre-drill holes approximately 12" O.C. Plywood to be fastened to building by black lag screws $3/8" \ge 2\frac{1}{2}"$ (approximately). A spacer might be needed between plywood and building in order to accommodate nuts of metal sign mounting bolts.

Color:

<u>Handicapped</u> <u>Sign</u> (aluminum): White on blue (blue must conform to national handicapped color standards).

Permitted use blanks (aluminum): White on brown (P.M.S. 464).

Permitted use decals (3M controltac 180-10 self adhesive sheeting): White on brown (P.M.S. 464).



Campgrounds

- 1. There should be two (2) accessible campsites per every fifty (50) sites. These should be located on a relatively flat, firm surface.
- It is essential that the accessible sites be approximately 300 feet from the support facilities such as a sanitation building, wherever possible.
- 3. The campsites which are physically accessible for the persons who require easier mobility and access, will be held until all other campsites have been filled for that day. If they are still available when all other sites are filled, they are then to be given to campers who are able-bodied and/or disabled on a first come first serve basis. This policy will be stated in our State Park Manual so all users are aware of it.
- 4. For initial awareness purposes, the campsites which are designated accessible will have small access logos attached to the wooden posts with the designated campsite numbers. If these sites are not used by persons with disabilities, the occupation tags which campers receive and must attach to the posts, will easily overlay the logo. We may find that placement of these access logos at specific campsites is not necessary. (This may relate more to state parks than any other MDNR areas).
- 5. An accessible campsite pad specification is attached for your information. Campsite access must depend on the physical uniqueness of each site.



Picnic Areas

- 1. Tables are to be placed on a flat firm surface.
- 2. <u>All</u> new tables are to be designed according to the "typical" specifications adopted by the Minnesota Department of Natural Resources (refer to graphics). These tables are to be built as needed to replace deteriorated tables. Repaired tables need not be modified.
- 3. Fire pits and grills are to follow standard MDNR plan.
- 4. Trash cans of 30 inches height; lids open with single hand operation; placed on hard surface.
- 5. Location of accessible areas for persons with disabilites will be approximately 300 feet from support facilities such as a sanitation building, wherever possible.



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Trails

Access trails, hiking trails, and interpretive trails should be physically accessible to all users wherever this is possible without undue alteration of the landscape. At the same time, trails should provide a challenge to the user. To accomplish these goals a trail chart has been developed to assist the planner and user in determining a trail's specifics (see accompanying chart). By utilizing this system, a user could select challenging trails in accordance with ones capabilities.

- I. GENERAL INFORMATION (Refer to trail chart and graphics for specifics)
 - A. Trail Dimensions
 - 1. All two-way trails should have a minimum width of 6 feet or have passing stations periodically, and a maximum width of 8 feet. One-way trails must have a minimum width of 3 4 feet.
 - If the trail is to be used simultaneously as a service access to a building or facility, the trail can be maximum width of 10 - 12 feet (depending on specific area).
 - 3. Trails should be cleared of obstructions to a height of 8 feet.
 - B. Care in Initial Alignment of the Trail is of Utmost Importance
 - 1. An alignment should be chosen with the least amount of grade change while providing the user with a variety of outdoor recreational experiences.
 - 2. If an entire trail cannot be adapted for use by persons with disabilities and the elderly, spur or loop trails will be provided to interpret points of interest.
 - C. All trail surfaces should be free of indentation or obstructions, and be constructed of non-skid material.

II. CONSTRUCTION SPECIFICATIONS

An accessibility trail chart and some graphic specifications have been included in the manual to provide basic informational ideas. For specifics relating to each unique situation, work should be planned and implemented directly with the MDNR Bureau of Engineering.

The cross sections shown on the following page represent three accessible surface types. Other trail surfaces are useable such as 100% crushed gravel, clay, limestone, etc. The surface type to be used is to be determined by geographic location and local conditions.

- A. Trail Pitch
 - Trails should be constructed as level as possible to allow for easy handling of wheelchairs and yet maintain surface drainage.
- B. Grade Changes
 - Slopes should have gradient of 5% (1:20 slope) or less allowing maximum of 8.33% (1:12 slope).
 - If slopes of 5% or greater must be maintained for a distance greater than 60 feet, a 6 foot level distance for resting, should be located at 30-45 foot intervals (specifications will depend on location).
- C. Ramps (Refer to trail chart and graphics for specifics)
 - If elevation changes greater than those preferred are necessary, ramps should be used.
 - 2. A maximum slope of 1:12 should be maintained on ramps if they are to be negotiated by wheelchairs without assistance.
 - 3. Handrails shall be provided for all slopes exceeding 1:15.
- IV. RAILINGS, CURBS AND/OR OTHER SAFETY RETAINERS (Refer to chart for further specifics)
 - A. Railings and curbs shall be used on the downhill side of all trails with adjacent slopes greater than 40%.
 - B. Retaining devices are not required on trails with adjacent slopes of less than 40% but may be provided if desired.
 - C. All ramps and bridges must be constructed with railings and curbs.
 - 1. A 37 inch minimum width must be maintained between railings for a one-way trail or 72 inch minimum distance between railings for two-way circulation.
 - D. Railings should be 32" high.

- E. Materials for these retainers should be as unobtrusive as possible, complementing the natural environment.
- V. SIGNS
 - A. Trails should be clearly and unobtrusively marked at the point of beginning and at points of interpretation. This is to be accomplished with large lettered signs or a relief map of the area. The method of this communication may also differ with various types of interpretation. Tape recordings are often an excellent method for persons who are blind or visually impaired.
 - B. All signs must receive departmental approval and in the future will be found in the departmental sign manual.
- VI. REST STOPS (Refer to attached typicals)
 - A. Rest stops should be located at approximately 500 foot intervals along the trail, wherever possible, with capacity for seating and wheelchair usage.
 - 1. Benches should be provided if possible with armrests and backs to aid the elderly and persons with disabilities.
- VII. POSSIBILITIES FOR PROVIDING ACCESSIBILITY FOR THE BLIND AND/OR DEAF
 - A. Differential textured strip in trail surface.
 - B. Trail crossings or forks marked by texture change.
 - C. Curbing following the trails.
 - D. Interactions should be oriented to touch.
 - E. Potential of someday is communicating with the use of sign language.
 - F. "Whether the blind person is accompanied or alone, it is unnecessary to have any special design specifically for the blind or visually impaired, as long as the areas are safe for everyone" (American Foundation for the Blind, 1972, Policy Statement).

ACCESSIBILITY TRAIL CHART

	* 1	2	3	4	5
Length of Trail	0 - ½ Mile	⅓ - 1 Mile	1 - 3 Mile	3 - 10 Mile	Over 10 Miles
Rest Stop Spacing & Types Use natural materials whenever possible for benches, shelters, etc.	100' - 150' ** benches, shelter inter- pretation	200' - 300' benches, shelter interpretation	500' - 600' natural benches, occasionally interpretation	Every one mile cleared area - adjacent trail or interpretation	None - unless extremely unique interpretation
Width of Trail	1-way - 4' 2-way - 8'-10'	1-way - 3'-4' 2-way - 8'	1-way - 3' 2-way - 6'-8'	1-way - 2'-3' 2-way - 4'-6'	Undefined
Width and Type of Trail edge	l냧' grass edge. Slight slope toward trail	Clear understory brush to 1' from trail; gradual slope either dir- ection	Clear understory brush to l' from trail; no abrupt dropoffs adjacent	Clear understory brush to ½' from trail	Undefined
Slope of Trail	1:50	l:20 with 5' level space at 100' intervals	l:l2 with level space 5' long at 30' intervals	<pre>1.8 occasional level space when possible</pre>	steps or natural terrain
Cross Slope	*** None	1:50 for max. of 30' and varied from one side to other- entire trail	l:25 for max. of 50' - vary from side to side	1:20	Undefined
Surface of Trail	 concrete asphalt wooden planking going perpendic- ular to walking 	 asphalt very fine crushed rock, solidely packed surface 	- firm pea gravel size surface, well compacted	 bound woodchips class 5 gravel mixture, coarse 	- sandy - rough unbound woodchips - rocks
Trail Edge (Rails, cúrbs, etc.) Use natural materi- als whenever possible	Curbs used where necessary for safety; rails 3' high for safety or for resting along lineal slope where necessary	Gradual ramping; rails used for resting along lin- eal slope and to provide safety on cross slope or hazard area	Compacted earth level with trail edge; definite tex- ture change. Rails for holding slope at steepest grade and for safety	Texture change with immediate drop to natural terrain from trail edge. Rails used to guard hazard	Nothing

* 1 - 5 where "1" is the easiest trail and "5" is the most difficult
** Benches may mean commercial type or a big log or boulders suitable for sitting on

*** Drainage by crown or valley - cross slope strongly relates to lineal slope

























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