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CHAPTER ONE: WILLOW FLOWAGE SCENIC WATERS AREA

INTRODUCTION AND OVERVIEW

On a clear day in late May 1998, Governor Tommy G. Thompson officially dedicated the Willow Flowage. The Department purchased 8,720 acres comprised of islands and shorelands from Four States Timber Venture the previous November. Another 7,054 acres were to the property in 1999 by a land purchase from Packaging Corporation of America, called the "Great Addition". In total, (40 acres purchased in 2000 and 360 acres in Tomahawk River Pines Natural Area) the State of Wisconsin's current ownership within the Willow Flowage property boundary is 16,174 acres.

The Willow Flowage Scenic Waters Area is located in west-central Oneida County 15 miles southwest of Minocqua and 12 miles northwest of Tomahawk. Included are 106 islands, 64.1 miles of mainland shoreline, plus a scenic easement on an additional 9.4 miles of shoreline. About 95% of the flowage's shoreline is undeveloped. The remaining 3.6 miles (5%) are in private ownership, which includes three resorts, three private campgrounds, several private cabins, a boat tour company and a general store. Seven boat landings provide access to the waters and the primitive campsites scattered about the islands and mainland shore.

Created in 1926 with the damming of the Tomahawk River, the flowage is down-stream from the confluence with the Willow River. Its original use remains that of a storage reservoir providing a constant flow of water in the downstream river system for a variety of public purposes. At full capacity the flowage has a maximum depth of 30 feet and, although seasonal water depths vary greatly, the fishery and wildlife flourish. The Natural Resources Board designated the flowage an Outstanding Resource Water in December 1997 because it has excellent water quality and supports a diversity of aquatic plants, fish and wildlife.

With limited development and access, this large, irregularly shaped, island studded reservoir holds a wild flavor. This sense of remoteness and scenic, natural shore is a unique and highly valued feature, drawing people from around the region and state.

Flowage visitors find pine and willow studded islands and rock strewn sandbars. Abundant walleye and panfish populations along with northern pike, muskellunge, and large and smallmouth bass make fishing the primary draw. White-tailed deer, bear, beaver, muskrat, otter and ruffed grouse are also found here. Mallards, hooded mergansers, blue herons and loons are common waterfowl visitors. Eagles and osprey can be seen fishing the waters or tending young around the flowage. Three wolf packs roam the area.

Aspen dominates the uplands. It is interspersed with red and white pine, red oak, maple, white birch and fir/spruce. About 30% of the land is lowlands timbered with black spruce, tamarack, northern white cedar and swamp hardwoods or is open bog, sedge meadow or shrub swamp. Intensive, commercial logging in recent years (prior to the state's purchase) has created a relatively

young forest across most of the backland area. However, a narrow band of more mature trees has been left around the shoreline. This gives the Willow Flowage property a more wild, scenic appearance from the water.

A mile upstream from the flowage lies the Tomahawk River Pines State Natural Area. The Great Addition purchase connected this previously existing state owned natural area to the flowage. The newly acquired lands along the river will allow permanent protection of additional sensitive habitats.

Flowage History and Past Management

The 6,392-acre Willow Reservoir came into existence in 1926 when Wisconsin River Valley corporations were looking to the future to provide sustainable water power for their industrial plants. The Willow Flowage waterbody was constructed and is still owned by the Wisconsin Valley Improvement Company (WVIC). The company's purpose, as stated in the charter, is *"...to produce as nearly a uniform flow of water as practicable in the Wisconsin and Tomahawk rivers by storing in reservoirs surplus water for discharge when water supply is low to improve the usefulness of the rivers for all public purposes and to reduce flood damage."*

WVIC owns fee title to most of the land below the ordinary high water mark (elevation 1,529.35 feet NGVD (National Geodetic Vertical Datum)). The State of Wisconsin owns most of the land above the ordinary high water mark surrounding the flowage and 106 of the islands within it. WVIC owns and operates the dam, including water levels in the flowage, under a federal license. Together, WVIC and the Department are responsible for the long-term protection and maintenance of this highly valued public resource.

WVIC is required by the Federal Power Act to have a federal license for its operation. The license was renewed in 1996 for 30 years. The bed of the reservoir is owned by WVIC. Additionally, WVIC holds restrictive covenants on much of the land surrounding the flowage. These covenants prohibit construction of buildings or other structures along the shoreline and in many cases prohibit any use other than timber production and harvesting. The Department's Willow Flowage Master Plan, therefore, must be consistent with these covenants.

The quality and undeveloped nature of the flowage and its surrounding lands are a result of the long-time management of WVIC and the industrial forest owners. The forested lands surrounding the flowage were industrial forest lands managed primarily for large block aspen with smaller areas in pine. A 100-foot wide unmanaged, scenic strip was left around the flowage.

In addition to regulating water flow for downstream waterpower and producing forest products, the area has long been a popular destination for fishing, camping, hunting, and the enjoyment of nature and solitude. As many as 54 unauthorized primitive campsites were developed by users. The existing recreation facilities are shown on Map 3.

Boat access is provided by seven boat landings. Only two are developed public landings, which are provided by WVIC. Public vehicle access to the flowage lands has been and remains limited, as the logging roads and most of the industrial forest roads were closed to public vehicles. ATVs

and snowmobiles have been popular on the flowage and on designated trails. Small portions of the regional network of designated ATV and snowmobile trails cross corners of the property. Unauthorized off-trail ATV use has been common, especially on exposed areas of the lakebed along the shoreline.

Summary of Public Involvement Activities

The Willow Flowage and its future are important to many people. Over 850 people asked to be on the mailing list for planning information. The public participated heavily in the planning process, providing a substantial and valuable contribution.

Throughout the planning process there were multiple opportunities for public dialogue and input. Informational materials, meeting announcements and progress reports were regularly sent to the mailing list and posted on the Willow Flowage Master Plan web page. Additionally, newspapers and local television and radio stations covered the meetings and planning progress. A chronicle of citizen participation and master planning events may be found in Chapter 6.

The public involvement process included many meetings of various types, such as open-house sessions to identify planning issues, workshops to develop draft vision and goals and management alternatives, a forum to discuss background data relating to management issues and meetings around the area and state to discuss the draft alternatives.

Tribal Consultation

Members of the Willow Flowage Master Planning Team and representatives of the tribes met on a regular basis to discuss progress on the plan and impacts on treaty rights. Consultation with tribes is a requirement of Chapter NR 44.04(7)(c) which reads: "During a planning process for properties lying within the ceded territory recognized by *Lac Courte Oreilles v. Voigt*, 700 F.2d, 341 (7th Cir. 1983), the department shall consult on a government to government basis with Indian tribes retaining off-reservation hunting, fishing and gathering rights in that territory."

DNR and WVIC Partnership

DNR and WVIC have unique roles and responsibilities relative to management of the Willow Flowage. Through the Willow Flowage Master Plan, the DNR will implement a multifaceted land-based resource stewardship program and provide for compatible recreation. Under authority of FERC license, WVIC will continue implementation of the required and approved flowage operation and related environmental and recreation plans.

DNR and WVIC are partners, with each having its own management roles and responsibilities. However, each is dependent upon the other to successfully fulfill their management objectives. Therefore, WVIC and DNR agree to consult regularly to maintain a clear understanding of their management roles and objectives and to seek cooperative approaches that may include lease or land use agreements for portions of WVIC property to provide for the long-term quality of the Willow

Flowage and its use.

Primary Planning Issues

Recreational use issues and future forest management overwhelmingly dominated people's concerns. There is a wide gap between the pro-motorized and non-motorized recreation enthusiasts. The ATV and snowmobile riders strongly favor keeping the existing trails and expanding the trail network throughout the property. Those opposed think the property should be closed to all motorized uses to provide opportunities for more of a "wilderness" experience, and to prevent negative environmental impacts.

While there is a long history of motorboat use on the flowage, concerns were raised about the level of personal watercraft and outboard motor use. Some people want all or part of the flowage set aside for only non-motor uses. Others expressed concern that motorboats were causing shoreline erosion and disturbing wildlife, and suggested the boats be restricted to slow-no-wake or have motor size limits.

Another motorized use issue that was heavily debated was motor vehicle access across and throughout the property on logging roads, which had been closed to the public under past ownership. Again, many people want to keep access to the flowage and backland areas limited to maintain or increase the property's remote character.

Most people say, "keep the flowage the way it is". This especially is the sentiment for camping and shoreline management. Overwhelmingly people want to keep the ability to camp on the islands at primitive campsites. Further, maintaining a natural undeveloped shoreline and the sense of remoteness or "wilderness character" of the flowage is vital.

In the area of managing the forest and wildlife, there is strong support for continuing a high level of aspen management for timber products and deer and grouse habitat. However, most are opposed to continuing the timber company's large clearcut method. Additionally, a number of people advocate increasing biodiversity and leaving a wider scenic zone along the shoreline.

It is clear that the Willow Flowage is a special resource that deserves special management and protection, but not all people agree on what or how to do it. Reaching consensus on any issue requires careful thought by all participants, a willingness to listen to the views of others, and to accept a compromise or search for common ground. These traits have been repeatedly demonstrated by planning participants throughout the plan's development.

Overview of the Proposed Master Plan

The Willow Flowage Scenic Waters Area is the recommended property name within the recreation area designation. This designation seems to capture the public's sentiment for the area and allows a suitably wide range of management and uses.

The proposed master plan focuses on preserving and enhancing the natural, undeveloped scenic

beauty and solitude of the Willow Flowage and Tomahawk River, protecting water quality and providing opportunities for compatible low-impact recreation. The proposed recreation opportunities include 30 designated single unit campsites, 5 designated group campsites, a nature trail and a primitive hiking trail (Refer to Map 4). The existing motorized recreational uses of snowmobile and ATV riding will continue on existing approved trails. However, no new motorized recreation trails are recommended in this plan. Other common recreational pursuits will include fishing, boating, wildlife viewing, hunting and trapping, and nature study. With this plan, users will be able to expect a feeling of remoteness and solitude.

Under the proposed plan, the Willow Flowage is divided into four land use classifications: Scenic Resources Management Area, Forest Production Area, Native Community Management Area and Special Management Area. The emphasis of the Scenic Resources Management Area is to maintain the existing character of the undeveloped shoreline of the Willow Flowage.

In the Forest Production Area, which is most of the lands back of the flowage and Tomahawk River, much of the area will remain in aspen timber type. This area will be managed to increase the range of age classes and emphasize a mixture of timber types. Where soils are suitable, there will be scattered patches of red oak, red maple, fir-spruce and red, white and jack pine. The benefits of these forest management practices include increasing biodiversity, increasing the range of wildlife habitats and overall, improving the aesthetics.

Two Native Community Management Areas are proposed. One area, on the large flowage peninsulas, will be managed to create large old-growth red and white pine. The other area, within the expanded State Natural Area along the Tomahawk River, will be managed to protect a variety of sensitive native communities along the river corridor. The Special Management Area identifies the existing gravel pit. It will be used until the current stockpile of gravel is removed, at which time the site will be reclaimed.

Summary

The master plan for the Willow Flowage Scenic Waters Area takes into account the property's resource and recreation capabilities, the regional analysis and public opinion. As a result, the proposed resource management activities and public use generally continues traditional uses and purposes of the flowage and surrounding land. The Department believes this proposed master plan most closely reflects the overall public opinion expressed throughout the planning process and matches the resource capabilities of the property to support its designation as a scenic waters area.

CHAPTER TWO: PROPOSED MASTER PLAN

VISION

To preserve and protect the natural scenic beauty and solitude of the Willow Flowage by maintaining its undeveloped shoreline, managing its resources and offering compatible recreational opportunities. The Willow Flowage is managed in consultation with federal, tribal, local and other governments, and with other people who care about the property, including those who live, work and recreate in and around it.

GOALS

- Maintain and enhance the aesthetic qualities and solitude of the Willow Flowage.
- Protect the water quality, sustainable fisheries, undeveloped shoreline, and aquatic and terrestrial habitats of the Willow Flowage that led to its designation as an Outstanding Resource Water.
- Manage for and enhance the diverse range of native flora and fauna of the Willow Flowage.
- In consultation with tribal governments, manage the land and other natural resources to provide for the exercise of Chippewa Treaty rights in accordance with applicable law.
- Provide access, for persons of varying abilities, to the resources and recreational opportunities of the Willow Flowage.
- Acquire additional lands to maintain and enhance the aesthetic qualities, solitude and outstanding resource water designation of the Willow Flowage and surrounding area.
- Provide for a variety of information, education and interpretation opportunities about the Willow Flowage and surrounding area.

The Willow Flowage Scenic Waters Area has two distinct management areas. One is the core flowage area, which is managed to protect the natural scenic beauty of the undeveloped flowage and lower Tomahawk River and to provide for water-based recreation and primitive camping. The other is the vast backland area of woodlands and bogs, which provides important wildlife habitat and timber products and contributes to the flowage's remote, undeveloped environment. For convenience, the primary elements of the master plan are organized by these two management units.¹

FLOWAGE MANAGEMENT UNIT

The flowage management unit covers the core area of the property where recreational use is most concentrated. It includes the flowage, shoreline and all islands. Lands along the lower Tomahawk River are also included in the flowage management unit.

A primary management goal for the flowage management unit is to protect the natural scenic beauty of the flowage's 64 miles of undeveloped shoreline and islands for public enjoyment. Today, as shown on Map 5, the existing vegetation around the shoreline is primarily mature aspen punctuated with large diameter red and white pine. Balsam fir and white pine seedlings and saplings are common components of the understory. The forest on the northernmost part of the flowage is young aspen saplings. The forest is in a state of transition from younger forest to older forest conditions. Eventually the shoreline will predominantly be a forest looking similar to the historic pine forests in the early days of Wisconsin.

Scenic Resources Management Area

Most of the shoreline is designated as Scenic Resources Management Area (Refer to Map 4). This area includes lands along the lower Tomahawk River, all islands, and a 300-foot strip along the shoreline (landward of the ordinary high water mark), except for the shoreline designated as Native Community Management Area.

Long-term Management Objectives; Promote, maintain and enhance a natural, wild appearing landscape around the flowage and along the lower Tomahawk River and in other designated public use areas. Provide nesting and brood rearing areas for eagles, osprey and great blue heron. The vegetation will be characterized by a mature forest dominated by long-lived species, especially large diameter (more than 12 inch diameter breast height (DBH)) red and white pine.

Short-term Management Objectives; Maintain and enhance existing sites that meet the long-term objective conditions, and convert as rapidly as practicable the stands dominated by aspen and other short-lived species to red and white pine and other longer lived species.

¹ The master plan only applies to lands owned or managed by the Department.

Authorized Management Activities in Transition Areas (areas not in the desired future condition); Activities include selective harvesting, hand tree planting, prescribed fires, thinning and routine timber stand improvement activities (i.e. pruning, non-commercial thinning, crop release and elimination of competing cull trees and shrubs) and construction and maintenance of logging roads.

Authorized Management Activities in Climax Forest Areas (areas at the desired future condition); Activities include passive management, limited selective harvesting, and moderate salvage and restoration management following major storm damage.

Management Prescriptions; As appropriate for the specific site and timber stand conditions, the following management prescriptions will be used:

1. On upland sites perform selective harvesting of aspen until long-lived species like red and white pine and red maple become established. This may range from 60 to 100 years. Only limited selective cutting to maintain the stand will be done after the climax forest is established, except for salvage following major storm damage.
2. Lowland sites generally would not be harvested.
3. Maintain 60 square feet or more of basal area per acre of trees 5 inch DBH and larger in harvest areas.
4. Conduct harvesting operations primarily on frozen ground to minimize soil compaction and erosion, and to avoid conflicts with warm season recreation activities.
5. Restrict wheeled or tracked equipment from operating within 50 feet of the ordinary high water mark.
6. Locate logging roads and decking areas at least 200 feet landward from the flowage or wetlands (defined by the ordinary high water mark). Schedule harvest intervals at a minimum of 10 years.
7. Slash remaining after tree cutting will be kept to lie within 12 inches of the ground.
8. Retain snag trees, live cavity trees, dead and downed logs and other ground material characteristic of unmanaged forests and important habitat for reptiles, amphibians and other wildlife.
9. Eagle and osprey nest areas are protected by a minimum 330-foot zone of no activity around each nest site.
10. Remove hazard trees within designated public use areas.

Recreation Management; Public use and recreation management in the Scenic Resources Management Area is discussed in the combined recreation section on page 11.

Native Community Management Area

The Native Community Management Area is located on the flowage's larger central peninsulas as shown on Map 4.²

² Refer to page 20 for management of the Tomahawk River Pines State Natural Area.

Long-term Management Objectives; Maintain a managed old-growth native forest community with a dominance of red and white pine component.³ These stands will be well represented by large and relatively old trees (older than their traditional rotation age). This community has much of the structural diversity typical of natural old-growth forests, including dead trees, snags, tip-up mounds and a substantial amount of coarse woody debris.

Short-term Management Objectives; Convert stands dominated by aspen and other short lived species to red and white pine and other longer lived species. Encourage large diameter trees and other old-growth forest characteristics. Maintain the scenic quality of all shoreline areas.

Authorized Management Activities; Activities include light selective harvesting or thinning, prescribed fire, hand planting, moderate salvage operations, and construction and maintenance of logging roads. *Note: Management activities are primarily directed toward developing and maintaining old-growth compositional, structural and functional attributes. The production of timber products is a secondary by-product of management.*

Management Prescriptions; As appropriate for the specific site and timber stand conditions, the following management prescriptions, which simulate natural processes, will be used to establish and maintain the old-growth forest community:

1. In developing stands, conduct light thinning harvests to allow pine to grow and develop large diameter characteristics quickly. Retain dead snags, live cavity trees and woody debris to the degree practicable.
2. Before, but usually near, a stand's pathological maturity age, regenerate the stand by a combination of prescribed fire and harvest (leaving a portion of the mature trees as reserves that will not be harvested). Prescribed fire should be used early and periodically to eliminate undesirable competition from species like aspen and red maple.
3. Conduct harvesting operations primarily on frozen ground to minimize soil compaction and erosion, and to avoid conflicts with warm season recreation activities.
4. Restrict wheeled or tracked equipment from operating within 50 feet of the ordinary high water mark of the flowage or wetlands.
5. Locate logging roads and decking areas at least 200 feet landward from the flowage or wetlands (defined by the ordinary high water mark).
6. Within 200 feet of the wooded edge of the flowage, treat the slash remaining after tree cutting so it lays within 12 inches of the ground.
7. Eagle and osprey nest areas are protected by a minimum 330-foot no activity zone around each nest site.
8. Remove hazard trees within designated public use areas.
9. Consider active native understory restoration.

³ In addition to old-growth pine, the community will likely contain a variety of tree sizes and age classes as well as other species, due to variable site conditions, effects of small natural disturbances and other factors.

Recreation Management; Recreation in the Native Community Management Area is discussed in the combined recreation section below.

Recreation Management

The recreation management objective for the core flowage area is to provide opportunities for dispersed, low impact recreation, particularly water-based recreation, and for the enjoyment of the area's natural scenic beauty and solitude. Hunting, trapping and fishing are traditional uses and will continue according to season regulations. *Note: Recreation management for the forested backland area is described separately on page 19.*

Recreational Use Classification

The flowage and the lower Tomahawk River corridor are managed to provide a Type 3 Recreational Use Setting with an emphasis on a feeling of remoteness and solitude, a natural, undeveloped appearance, and a low-level of facility development.⁴ (Refer to Appendix C for the Type 3 Recreational Use Setting defining criteria.)

The Type 3 Recreational Use Setting subclassification is assigned to all the Scenic Resources Management Area. The Native Community Management Area portion of the shore does not have a recreational setting designation, however, campsites or other recreation facilities will meet the same standards as the Scenic Resources Management Area.⁵

Camping

Camping opportunities will be at watercraft (motorized or non-motorized) accessible, semi-primitive campsites on the flowage.⁶ Other types of camping opportunities will not be provided. Camping will be allowed only at designated campsites. All campsites will be available to campers on a first-come, first-served basis. Camping fees are waived per NR45.10(1)(k).

Camping will be restricted to a maximum stay of 10 days. Once occupied, the site cannot be left unoccupied for more than one night. Campsites open for camping will have a sign designating the site open for camping and a box latrine. Thirty single unit campsites and five group campsites will be provided. The location of the designated campsites is shown on Map 4.

⁴ Routine motor boat use, resort and cabin developments on southeastern shore, and timber harvesting activity in proximity to the flowage prohibits the flowage's designation as the more primitive Type 2 Recreational Use Setting.

⁵ The Uniform Land Management Classification System (Ch. NR 44) only established recreational use subclassifications for areas with the Recreation, Scenic Resources and Wild Resources classifications. Therefore, recreation management and development for these areas are to be specified by the master plan.

⁶ Currently, Chapter NR45.03(25) states, "watercraft campsite means a campsite along a waterway for use by persons traveling exclusively by watercraft." We will seek a change to NR45 to also allow access by foot.

The campsites may periodically rotate between use and non-use status over time, as warranted by environmental or other conditions. Campsites may also be closed, permanently or temporarily, to protect threatened, endangered or sensitive species and their habitats. The property manager may close (temporarily or permanently) and relocate campsites to new locations as needed. During a temporary closure of campsites the number of campsites open for use may be less than 30 single unit and five group sites.

The Department will seek “approved comparable compliance” from the Department of Health and Family Services where the natural conditions exist that do not permit literal application of the requirements of Chapter HFS 178 for campgrounds.

Remote Single Unit Campsites; The Department will establish and maintain 30 single unit semi-primitive campsites on the islands and shorelines of the flowage.⁷ The locations are shown on Map 4. A single unit campsite may be occupied by a family party or a party of up to six unrelated persons. All campsites will meet requirements for health and safety standards for latrine construction. A fire ring, picnic table and box latrine will be provided at each site. One or two of the single unit campsites will have a rustic pier and other facilities to provide for access and use by persons with disabilities.

Remote Group Campsites; Five semi-primitive group campsites will be established and maintained on the islands and shorelines of the flowage. The locations are shown on Map 4. The group campsites may be occupied by parties of up to 15 persons. All campsites will meet requirements for health and safety standards for latrine construction. Improvements provided at each site will include a fire ring, picnic table, and box latrine. One of the group sites will have a rustic pier and other facilities to provide for access and use by persons with disabilities.

Campsite Maintenance; All designated campsites will be regularly inspected for litter and maintenance needs throughout the camping season. Campsites will also be periodically inspected for public safety hazards such as dead trees, and the hazards will be removed or the site closed.

Campsite Development; Campsites will be located with consideration for minimizing environmental impacts and providing solitude for campers. New or redeveloped campsites will be located as far away from the water’s edge as practicable to reduce bank and vegetation impacts. Appropriate shore/bank protection measures, such as rip-rap or steps and railings, may be placed at campsites to minimize erosion from human use.

A well and handpump will be located near one or both of the WVIC landings located on Willow Dam Road. If the well and handpump are not located on state land, the Department will develop a cooperative agreement with WVIC for placement on their land.

Management activities for campsite development or rehabilitation may include planting,

⁷ Campsites are described as semi-primitive rather than primitive due to picnic table development.

clearing trees or brush, minor grading and erosion control measures. All developments, including environmental protection measures, will meet the standards for this recreational use setting.

Abandonment of Old Campsites; Many sites on the flowage were used for camping and other shore activities prior to the state's acquisition. Many of these sites do not meet requirements for siting latrines or are not suitable for continued use for other reasons. Those sites that are not designated campsites under this plan will be abandoned and restored to a natural appearing condition. As needed, eroded banks will be repaired and stabilized and the campsite area planted to native vegetation.

Other Shoreline Protection Measures; Informational signs will be installed at boat landing and trailheads to inform people of the need to avoid walking on sensitive shoreline areas that are subject to compaction, erosion and vegetation damage from trampling.

Foot Trails

There are two designated foot trails, as shown on Map 4:

Nature Trail; A loop nature trail of about 2.2 miles will be constructed from the curve in Willow Dam Road immediately north of the north WVIC boat landing to Indian Shack Point. The trail will be developed and maintained as a moderately developed trail (Refer to Appendix C for definitions) and will be disabled accessible. Wayside interpretive panels, rest stops with benches and directional signs will be placed at appropriate locations along the trail. The trailhead will include an information kiosk and a 10-car parking lot located between the trailhead and boat landings.

Hiking Trail; A loop primitive hiking trail (Refer to Appendix C for definitions) of about 4.5 miles will be constructed into the old-growth forest Native Community Management Area from Cedar Falls Road. The trailhead, with an informational kiosk, will be located at a 6-car parking lot near the Skunk Lake Gate off of Cedar Falls Road. This parking area will be enlarged and improved for hikers and other day users of the flowage.

Motorized uses, off-road biking and horse use; Refer to page 21 in the general recreation section.

Boat Landings

Public boat access provided by this plan is limited to two locations to maintain the remote character of the recreational experience on the flowage.⁸ One location is the dam area on the east. The other is on the flowage's far west side. These improved landings will be provided either by the Department or under cooperative agreement with other landowners, such as WVIC or industrial forest owners. The designated boat access sites are shown on

⁸ Public boat access to the flowage is currently provided by 2 improved boat landings located near the dam that are owned and managed by WVIC, by an improved private landing (fee access) on the north and by several unimproved sites on industrial forest land on the flowage's western bay. All current flowage water access sites are shown on Map 3.

Map 4. Any non-designated water access sites on Department managed land will be abandoned. The planned improvements at these access sites are outlined below:

Willow Flowage Dam; These two improved boat landings and associated parking lots are owned and operated by WVIC as part of their FERC license agreement for the dam. The Department will work with WVIC to expand the parking at these two landings (possibly onto state owned lands) to accommodate up to 42 vehicles with trailers. There will be additional parking for vehicles without trailers in the nearby nature trail parking lot. *Note: Currently, parking opportunities in this area are not adequate. As a result many vehicles are forced to park along the narrow Willow Dam Road.*

Sportsman's Landing; An improved public boat landing is proposed for the west side of the flowage.⁹ The only deep water location in this area is at the unimproved Sportsman's Landing on industrial forest land. The Department proposes to improve the landing under a cooperative agreement with the landowner. The landing will provide a one-lane access road, concrete boat ramp and a parking lot for up to 8 vehicles with trailers.

Toilet Facilities

Toilet facilities are currently provided at the south WVIC boat landing parking lot. The Department will work with WVIC to provide accessible toilet facilities either on WVIC or state owned lands.

Signs

Informational signs, kiosks, regulatory signs, boundary signs, snowmobile and ATV trail signs will be small and subdued to maintain a low impact on the natural setting. Wayside exhibits may be developed at key locations to interpret the various sites.

Fishery Management

The Wisconsin Valley Improvement Company developed a fishery management plan, which is in place and has been approved by Federal Energy Regulatory Commission (FERC). The plan's goal is to maintain the self-sustaining walleye population and quality panfish fishery (especially bluegill and crappie). The 1996 plan is based on recommendations from the Wisconsin DNR and the public through the FERC relicensing process. Presently, the Willow has a high quality, self-sustaining fishery.

The Willow Flowage has had both tribal and angler harvest, primarily of walleye, for the past several years. This joint harvest is expected to continue. The Wisconsin Department of Natural Resources conducts walleye population estimates and angler harvest surveys every six to eight years to monitor the Willow Flowage's fishery. If any additional

⁹ During the public involvement phase of the master planning effort the public strongly recommended the development of another "improved" boat landing site on the west side of the flowage. This site is needed in addition to Talbot's landing.

management activities such as stocking or habitat improvement are necessary, they will be done based on statewide fishery management policies.

BACKLAND MANAGEMENT UNIT

The backland management unit is an important "backdrop" of undeveloped land for the more intensively used core flowage area. The area is also important for production of forest products, wildlife and non-developed recreation opportunities. Three different land management areas lie within the backlands - Forest Production Management Area, Special Management Area (gravel pit) and the Tomahawk River Pines State Natural Area, which is classified as a Native Community Management Area. These management areas are discussed separately below.

Forest Production Management Area

The management goal for the Forest Production Area is to establish and maintain a forest community of diverse forest types and age classes for the sustainable production of a variety of forest products, wildlife habitat, especially for deer and grouse, biological diversity and to offer a range of opportunities for dispersed, low-impact recreation in an aesthetic forest setting. The area is shown on Map 4.

Proposed Boundary Expansion Area

Management of the Forest Production Area lands lying within the proposed boundary expansion area is not specifically detailed here. The cover types of the land within the expanded boundary are approximately the same composition as the current ownership area, which is 70% upland and 30% lowland (Refer to Map 5). If any of these lands are acquired, the management objectives and prescriptions of the currently owned lands will be applied according to the capability of the site.

Forest and Wildlife Management

This management area contains 13,300 acres of land, excluding the proposed boundary expansion area. As is typical for the property, aspen is the predominant timber type.¹⁰ Refer to Figure 1 below for the composition of the Willow Flowage forest production area. Non-commercial swamp, including alder and open muskeg, is the second most common timber type in the management area. These timber types total about 1,950 acres or 15%. Other common timber types that occur here, but represent less than 10% of the land area individually, are black spruce, red pine, and swamp conifers.

¹⁰ Fifty percent of the property is aspen timber type with the majority (51%) sapling to poletimber size (1-5") and between 20-40 years of age. About 32% is seedling to sapling size (<1"), less than 20 years of age. The remaining 17% of the aspen are small, scattered poletimber size (5"-11") stands more than 40 years of age.

FIGURE 1: Composition of Willow Flowage Forest Production Area.

Willow Flowage Forest Production Area		
Cover Type	Acres	% of Total
Aspen	6,620	49.76%
White Birch	150	1.17%
White Cedar	280	1.73%
Fir-Spruce	120	0.90%
Maple, Red	385	2.90%
Northern Hardwood	80	0.62%
Pine, Jack	160	1.28%
Pine, Red & White	1,420	10.65%
Swamp Conifer	2,020	15.18%
Swamp Hardwood	60	0.46%
Noncommercial Lowland	1,950	14.70%
Grass and Upland Brush	85	0.65%
TOTAL ACRES	13,330	100.00%

The following section identifies timber-type specific management prescriptions:

Aspen Management:

Long-term Management Objectives; Maintain 4,600 to 6,000 acres in aspen and other associated early succession timber species in a mosaic of different stand age and size classes in patches ranging from 20 to 50 acres, with minor components of pine, spruce, hemlock and oak, for the sustained production of pulpwood and deer and grouse habitat.

Short-term Management Objectives; Increase the age and size class diversity of large even-aged aspen stands. Establish a random mix of different size class patches throughout the management area.

Authorized Management Activities; Activities include modified clearcut harvests (coppice and standards), commercial thinning, mechanical site preparation, and prescribed fire.

Management Prescriptions;

1. Use even-aged management coppice and standards regeneration practices. (Aspen is regenerated by modified clearcutting - retain longer-lived conifers like pine, spruce and hemlock for aesthetic and habitat enhancement, and leave oak for acorn production for wildlife.)
2. Harvest on an average rotation age of 50-60 years depending on site quality. Some stands may be harvested earlier or later to establish aspen age class diversity.

3. Lay-out harvests to have irregular edges, with consideration for topography, to create a natural appearing forest.
4. When needed for the regeneration of other early-succession timber species, such as jack pine or white birch, use mechanical measures or prescribed fire where feasible for site preparation.

Pine Management:

Long-term Management Objectives; Maintain 2,000 to 3,300 acres in red and white pine timber on suitable sites (i.e. sandier, drier soils) for the sustained production of saw timber and the enhancement of biodiversity, wildlife habitat and aesthetics.

Short-term Management Objectives; On suitable sites, convert up to 1,000 acres of aspen timber type to red, white, or jack pine and convert existing pine plantations to the appearance, structure and function of a natural stand.

Authorized Management Activities; Activities include shelterwood harvests¹¹, thinning, planting, mechanical or chemical site preparation, prescribed fire, hand cut or herbicide release.

Management Prescriptions;

1. Where red or white pine is a viable understory component, use natural regeneration techniques (a two step shelterwood silvicultural system). Plant pine if natural regeneration fails or it is not possible.
2. Red, white or jack pine conversion and maintenance using site preparation as needed by mechanical or chemical means, or through the use of prescribed fire. Plant pine if natural regeneration fails or it is not possible. Release of pine by hand cutting or through approved forestry herbicides as needed.
3. Thin existing pine plantations on a recurring basis, according to prescriptions outlined in the DNR Silviculture and Forest Aesthetics Handbook, to create a structure similar to that of a naturally appearing pine stand.

Red Oak, Fir-Spruce, Red Maple Management:

Long-term Management Objectives; Maintain 650 to 1,500 acres in red oak, fir-spruce and red maple timber types on suitable sites to enhance biological diversity and wildlife habitat.

Short-term Management Objectives; Convert selected sites from aspen to mid-successional species (red oak, fir-spruce and red maple timber types).

¹¹ The two step shelterwood system consists of an initial harvest to reduce overstory shade to between 50% to 60% (actual crown closure will be species-dependent). After the desired species regeneration is fully established, the residual overstory is thinned to reduce it to 20% crown closure or less.

Authorized Management Activities; Activities include shelterwood harvest, under-planting, mechanical or chemical site preparation, prescribed fire, mechanical or herbicide release.

Management Prescriptions;

1. Use a two-step shelterwood system (see Pine Management) to convert aspen stands to red oak, fir-spruce and red maple and other associated mid-successional species. Under-plant white pine and red oak seedlings as needed.
2. Use mechanical or chemical means, as needed, or prescribed fire for site preparation to establish stand regeneration. Then, only as needed, use mechanical or chemical means to release the regenerated stand.

Lowland Forest and Other Wetland Habitat Management:

Long-term Management Objectives; Perpetuate the existing 4,000 acres of forested wetlands (including black spruce, tamarack, swamp hardwood and swamp conifers) and areas of open bog, northern sedge meadow, and shrub swamp for wildlife habitat, aesthetics and biological diversity of the property.

Authorized Management Activities; Passive management, shelterwood harvests, clear cut harvests.

Management Prescriptions;

1. No management activities will be conducted within non-commercial timbered swamps, areas of open bog and marsh and lowland brush. (*Note: these vegetation types comprise about 88% of the wetland acreage.*)
2. Regenerate commercial stands of swamp hardwood, primarily black ash, by limited harvesting (create partial openings or use shelterwood cuts) following the guidelines in the DNR Silviculture and Forest Aesthetics Handbook and consultation with the wildlife biologist. (*Note: the total commercial acreage is estimated to be less than 100 acres.*)
3. Regenerate commercial stands of tamarack and black spruce by limited harvesting stands (clearcut) following the guidelines in the DNR Silviculture and Forest Aesthetics Handbook and consultation with the wildlife biologist. (*Note: the total commercial acreage is estimated to be less than 200 acres.*)
4. Do not cut white cedar.

General Forest Management Prescriptions:

1. Emphasize forest diversity. Whenever possible, manage for those components that are missing or are underrepresented (e.g. oak or hemlock) on the private, industrial and county forest lands surrounding the Willow Flowage (e.g. landscape scale management concepts).

2. Conduct logging operations to minimize the scenic impact on recreational activities.
 - (a) Apply aesthetic considerations to maintain a "natural-appearing" landscape (i.e. lay-out timber sales in irregular shapes, and leave scattered trees or clumps of trees within clearcut areas.)
 - (b) Emphasize aesthetic management considerations along public roads or designated trails and other public use areas. Reduce harvest slash in these areas to less than 12 inches.
 - (c) No harvesting activity from Memorial Day through Labor Day or on weekends in May and September within 0.5 miles of the flowage, except as needed for public health and safety after a catastrophic natural event.
3. Maintain logging slash between 24 and 36 inches of the ground.
4. Salvage timber after storm events.
5. Follow Best Management Practices for Water Quality (BMP's) when harvesting in and around wetlands, lakes and streams. Provide a buffer area or stagger cuts around wetlands as needed to minimize impact on amphibians and reptiles that use both the wetlands and uplands.
6. Maintain an appropriate network of logging roads throughout the property for logging, fire control and non-motorized recreational uses. Periodically evaluate the network of logging and service roads. Roads deemed non-essential for future logging purposes or other property management activities will be closed to motorized vehicles and allowed to revert to natural vegetation. Road closure will be by blocking them with natural materials, such as earthen berms or boulders. New logging or operations roads may be constructed as needed. There will be no net increase in road density.

Recreation and Public Use

The recreation management objective for the area is to emphasize opportunities for non-motorized, dispersed recreational activities in a large, forested setting offering solitude and a sense of remoteness. Limited motorized recreational vehicle use (snowmobiles and ATVs) will be allowed on designated trails. Specific recreation management provisions are listed below:

1. Motorized public access to the area shall be limited. Except for the Iron Gate Road and the designated snowmobile and ATV trails, access will be only by foot from the flowage shore or public roads along the edge of the property.
2. The Iron Gate Road from Highway Y to the (relocated) second gate, about 2.3 miles, will be open seasonally to public highway licensed vehicles. It will be maintained as a moderately developed road (Refer to Appendix C for definitions). A six-car parking area for recreational visitors will be provided near the second gate.
3. Hunting, trapping and fishing are traditional uses of the area and will continue according to season regulations.
4. The area is open to hiking, cross country skiing and snowshoeing. However, maintained or designated trails or other facilities will not be provided.

Note: Motorized uses, off-road biking and horse use provisions for the property are

described on page 21 in the general recreation section.

Special Management Area

The Special Management Area located in the southeastern part of the property, shown on Map 4, is a gravel pit that was used by the previous landowners to provide gravel for logging roads. The existing gravel stockpile of approximately 5,000 cubic yards of high quality gravel will be used. Then the site will be abandoned and reclaimed to a natural appearing condition. Additional gravel extraction at this site or other sites on the Willow Flowage property will not be allowed. Following reclamation, the Special Management Area classification will expire and the site will become part of the Forest Production Area. Restoration will use native plant species.

Native Community Management Area - Tomahawk River Pines State Natural Area

The 1,040 acre Tomahawk River Pines State Natural Area lies along the river upstream of the flowage as shown on Map 2. The area is comprised of a mix of upland, wetland and aquatic-community types. The large pines in the area have been important eagle nesting sites.

Management Objective; To preserve the area's native communities in a natural condition with minimal human disturbance. The communities include northern dry-mesic forest (dominated by large red and white pine), northern wet forest (dominated by black spruce and tamarack), alder thicket, and slow, warm hard water streams.

Authorized Management Activities; Activities include passive management (e.g. no timber harvesting) and control of invasive exotic species by means approved by the Department.

Management Prescriptions;

1. Erect and maintain boundary signs ("state natural area" and "private land ahead").
2. Periodically search for invasive exotic species and remove according to approved guidelines.
3. Close and berm any roads leading into the natural area, and monitor for unauthorized motor vehicle use.
4. As needed, pick up litter and restore sites that have been damaged by recreational use to native vegetation.

Recreation and Public Use

The Native Community Management Area of the Tomahawk River Pines State Natural Area does not have a recreational setting designation. Recreation facilities will meet the same standards as the Scenic Resources Management Area.

Canoeing is the predominant recreational activity along the river corridor. Shoreline camping is not allowed within the designated natural area. Designated trails will not be developed. Motor vehicle use and horse riding are not allowed. Hunting, trapping, fishing and hiking are allowed.

If additional Natural Area lands are acquired that have an existing designated snowmobile trail, the trail would remain. However, if the trail requires re-routing in the future, it will be relocated outside the state natural area boundary.

PROPERTY-WIDE MANAGEMENT PROVISIONS

Proposed Boundary Expansion

The total acreage within the existing boundary is 17,518 acres. This includes the DNR ownership of 16,174 acres, 670 acres of state land owned by the Board of Commissioners of Public Lands (BCPL), 634 acres in private ownership, and 40 acres of industrial forest land.

A boundary expansion for an additional 17,286 acres, as shown on Map 4, includes 1,500 acres owned by the Board of Commissioners of Public Lands, 2,111 acres in private ownership and 13,675 acres of industrial forest land. The expanded boundary, which includes a total 34,804 acres (16,174 state ownership and 18,630 proposed) would promote management of the property on more of a landscape scale, and prevent adverse affects on the wolf populations in the area caused by development and road-building. The acquisition would permanently help protect the water quality of the watershed and Willow Flowage.

All land purchases will be on a willing seller basis. At times, it may be in the interest of the Department and the landowner for the Department to acquire less than fee-title ownership of a property within the boundary. The Department has a number of easement alternatives available and has the opportunity to acquire only specific rights to any given property (DNR Land Acquisition Handbook). The DNR will seek to acquire the Board of Commissioners of Public Lands acreage by trade.

Recreation

Natural Resource Board policy (NR1.61) addresses public use on Department lands. Traditional outdoor uses include hunting, fishing, trapping, walking, nature study and berry picking. Other types of recreational uses must be authorized in the property's master plan.

ATV and snowmobile use is provided on the existing state, county or club trails designated on Map 4. Continuation of these trails is dependent on satisfactory use agreements with the sanctioning entity. The permittee is responsible for developing and maintaining the trails to the standards outlined in the Department's trail handbook. The Department retains the

right to relocate the existing trails to meet the needs of this plan.

Biking is allowed on all logging roads, unless they are posted closed. *Note: This will take effect following amendment of Chap. NR 45.05(3)(e) to allow bike use off of designated trails.* Biking is not allowed on the nature trail, but will be allowed on the designated hiking trail. Horseback riding is not allowed on the property, except on public roadways.

This management plan does not designate any day use sites. However, unoccupied campsites can be used for day use activities such as shore lunches. Additionally, WVIC provides a picnic area near the dam. *Note: Campfires are permitted only in designated fire places or fire rings per NR45.07.*

Road Access and Closure

Public Roads

The Iron Gate Road from Highway Y to the (relocated) second gate, about 2.3 miles, will be open seasonally¹² to public highway licensed vehicles. Iron Gate Road will be maintained as a moderately developed road (Refer to Appendix C for definitions). A six-car parking area for recreational visitors will be provided near the second gate. The potential for opening additional roads to public motor vehicle access on other parts of the property is dependent on future acquisition and evaluation based on an amendment to the master plan.

Service Roads

Service roads are those roads throughout the property used by Department authorized motor vehicles for administrative, maintenance or management purposes. All service roads throughout the property are closed to public motor vehicle use. Service roads that provide access to private property within the boundary may continue to be used for ingress and egress by private landowners who have access rights as stated in their deeds. Service roads may be mowed to keep them open for the previously mentioned purposes.

Logging Roads

Logging roads include those roads throughout the property whose primary purpose is to provide access for timber harvesting. All logging roads throughout the property, including those acquired in future state land purchases, are closed to public motor vehicle access. In general, logging roads will not be mowed and may be allowed to grow up to natural vegetation such as shrubs and trees. At the completion of a logging operation all logging roads that intersect public roadways will be closed and blocked by a berm or other means.

¹² Seasonally includes the following: Iron Gate Road will not be plowed in the winter months and the gate on Highway Y will be closed during the spring thaw (dates may vary annually).

General Wildlife and Endangered Species Management

A variety of wildlife inhabits the Willow Flowage Scenic Waters Area. Department wildlife management staff will work with the property manager and foresters on timber harvesting activities to maintain and enhance the composition and structure of forest habitat.

The wildlife management staff will also conduct surveys to monitor wildlife populations, including rare, threatened, endangered or game species. Wildlife information about the Willow Flowage will be provided to the public. Additionally, staff will work to protect sensitive species areas, such as eagle, osprey and great blue heron and gray wolf.

Gray Wolf

The Department will manage the area consistent with the state wolf recovery plan. This includes prohibiting logging and trail or road development within 330 feet of active den sites, unless open trails or roads already occur in such areas at the time the dens are established. Also, areas within 0.5 miles of an active den site will be closed to logging, road or trail development from March 1 through July 31. Further, the Department will maintain strict limits on motor vehicle access to the property.

Eagle and Osprey

Department staff will follow established or future federal and/or state guidelines for management of bald eagle and osprey, which includes the actions listed below. Similar guidelines, or other heron-specific guidelines established by the Bureau of Endangered Resources, will be applied to protect great blue heron rookeries.

1. Prohibit most land uses within 330 feet of eagle and osprey nests.
2. Reserve a number of large mature and dead red and white pine within 200 feet of the shoreline of the flowage and river for eagle roost and nest sites.

Note: WVIC's flowage wildlife management plan, which is part of their FERC license agreement, calls for the maintenance of the undeveloped, wilderness character of the flowage (includes no plans for timber harvest on WVIC lands and limiting motorized access) to enhance eagle and osprey habitat. It further enhances osprey recovery by directing that artificial nest platforms be placed at suitable sites lacking natural nest trees.

Native Species to be Used

When planting of trees, shrubs, grasses and forbs is necessary, consideration will be given to use native species that are genetically compatible with species from the area.

Exotic Species Identification and Control

Priority will be given to prevent extensive infestations of exotic species by taking measures to identify and control aquatic and terrestrial exotic species. The *Willow Flowage Biological Inventory Report* (1998, p. 11) indicates the presence of two exotic species: reed canary grass and the Chinese mystery snail (*Citangopaludina chinensis subsp. malleatus*).

Reed canary grass already lines the banks of the Tomahawk River above Cedar Falls, and is abundant along the periodically disturbed (rising and falling water levels) shoreline of the Flowage. Its long-term impacts are unknown, however, it is a well known troublesome weed that has the ability to exclude many native species. The Chinese mystery snail is a grazer (D. Heath pers. comm.) and was quite visible during the low water in the summer of 1998. The impacts of this species are unknown at this time.

Water Resource Protection

The Willow Flowage has a water quality classification of Outstanding Resource Water (ORW). The property's forest and recreation management plans contain elements to assure protection of the high water quality and in turn to help protect the fishery and aquatic habitats. Additional water quality and habitat protection measures are described below.

Construction Activities

The Department will employ erosion control practices during all construction activities near the water (campsite or boat landing development) to minimize the amount of lost soil. Contractors are required to include erosion control practices in the bid specifications of all construction jobs, which adhere to the Wisconsin Construction Site Best Management Practice Handbook guidelines.

Invasive Exotic Species

The most likely mechanism of transport for exotic species, including Eurasian water milfoil, zebra mussels, rusty crayfish, and purple loosestrife, to the Willow Flowage is via boat traffic. To minimize the likelihood of transporting and introducing invasive species to the Willow Flowage, the DNR will use signs and other public information materials to alert boaters on the precautions they should follow to prevent spreading invasive aquatic species.

Authorized Response to Catastrophic Events

Wild fires, timber disease and insect infestations will be controlled to the degree appropriate to protect the values of each management area. Necessary emergency actions may be taken to protect public health and safety. The management response to timber blowdowns will be as prescribed in each management area's management prescriptions.

OPERATION AND ADMINISTRATION

Property Management

Chippewa Treaty Rights

The Willow Flowage is located within the ceded territory subject to the Chippewa off-reservation treaty right. No part of this plan can restrict the treaty right contrary to the provisions of the final judgement of the federal court found in LCO v. State of Wisconsin, 775 F. Supp. 321 (W. D. Wis. 1991).

Cooperation with WVIC

Much of the land immediately surrounding the Willow Flowage is covered by restrictive covenants held by WVIC. The Department must work cooperatively with WVIC in the management of these lands to adhere to the covenants. The Department will negotiate with WVIC for an agreement to cover WVIC lands that are exposed during seasonal draw downs.

Statutory Authority

Authority to acquire the land comes from several subsections of the s. 23.09(2)(d), Stats., due to the variety and significance of the Willow Flowage's Scenic Waters resources. That statute authorizes land purchases by the Department for fisheries, wildlife, forestry, parks, natural areas and recreation areas.

The recommendation to the Natural Resources Board to purchase the Willow Flowage (Natural Resources Board Agenda Item - October 1997) was to: preserve the outstanding resource, permit resource management and provide area for outdoor recreation. Of the 16,174 acres of the Willow Flowage Scenic Waters Area, 1,040 acres are recommended to be a part of the Tomahawk River Pines State Natural Area. For the remaining 15,134 acres, the designation that best fits this property is that of a recreation area as found in s. 23.091, Stats. because of preservation of the scenic resources of the area, resource management activities and recreational activities as outlined in this plan. The name of the property will be the Willow Flowage Scenic Waters Area.

Real Estate Management

The property manager will be the Department representative responsible for inspecting and maintaining the property. Landowners within the project boundary will be contacted periodically to see if there are any concerns or questions about any phase of the Willow Flowage Scenic Waters Area management, development or acquisition. The DNR Land Acquisition Handbook should be consulted for procedures for contacting and documenting landowner contacts.

Public Lands and Property Taxes

When the Department acquires land for public use, it makes payments for property taxes at the same level as any other property owner. Land purchased by the Department is removed from the tax roll, but to compensate for the tax base loss, each taxing jurisdiction (town, village, or city; school; Vocational Technical and Adult Education; county, and special districts) receives an aid payment equivalent to property taxes (s.70.114, Stats.). Refer to Chapter 5, page 52 for 1999 Willow Flowage payments.

Protection of Historic and Archeological Features

All new facility development sites (boat landings, parking lots, buildings) will be inspected prior to construction to locate and evaluate any evidence of significant archeological or historic material. These cultural resource surveys will be conducted in compliance with federal laws and state guidelines on historic preservation. Appropriate steps will be taken to protect and preserve all significant sites found.

Natural Heritage Inventory Screening

Prior to construction or management activities, the Natural Heritage Inventory will be screened to locate and evaluate any evidence of the presence of threatened or endangered species. Federal and state guidelines will be followed and appropriate steps will be taken to protect and preserve all threatened or endangered species.

Permits Issued by the Property Manager

The property manager may issue permits and collect fees, if applicable, for those activities that may legally be carried out on the property such as firewood cutting permit, metal detector permit, Christmas tree cutting and evergreen bough collection. The property manager may issue other permits and collect applicable fees as allowed by statute, administrative code or Department policy. Permittees must follow the rules and regulations as stated in the permit. Activities, if allowed by permit, may be restricted from portions of the property to ensure resource protection and diminish conflict with other allowed activities.

Accessibility

Recreational developments will comply with the Americans with Disabilities Act (ADA) for programs and facilities.

Access by Persons with Disabilities

The Department recognizes a need to provide reasonable access to Department lands by persons with disabilities, which includes permitting persons with disabilities to use vehicles on Department lands. The property manager may designate an area of the property and may issue a permit to use a motorized vehicle as a mode of personal conveyance according to Chapter NR 45.05(3)(d) and Manual Code 2527.7.

Storage Building

Due to the long distance from existing DNR storage buildings to the Willow Flowage (approximately 25 miles), construction of a cold storage/service support building on the property is recommended to store management equipment and supplies.

Refuse Management

There will be no refuse receptacles or collection at the campsites or Department managed access points. Burying of refuse is not allowed anywhere on the property. Property visitors are required to carry out whatever they bring in.

Public Contact Person and Communication Plan

The property manager will be the Department representative responsible to answer public inquiries on property development, operations, law enforcement and maintenance. The property manager will maintain a mailing list of persons or groups interested in receiving information about important management or use issues. Mailings and news releases may be used to notify the public of significant developments on the property.

CHAPTER THREE: ENVIRONMENTAL IMPACT ASSESSMENT

An Environmental Assessment (EA) is a document the Department prepares to inform decision-makers of the environmental effects of proposed actions. It serves as the primary document of the Department's reviewable record of its factual investigation to identify relevant areas of environmental concern and permit a reasonably informed prediction of a proposal's effect on the environment.¹³

EVALUATION OF PROJECT SIGNIFICANCE

Environmental Effects and Their Significance

Development Projects

The master plan calls for limited capital development on the property. Projects include a storage/service building, gravel parking lots, a pit toilet near the nature trail parking lot or boat landing and box latrines at the remote campsites. Any construction activities near the water would employ erosion control practices to minimize the amount of lost soil. Contractors would be required to include erosion control practices, which adhere to the Wisconsin Construction Site Best Management Practice Handbook Guidelines, in the bid specifications of all construction jobs. The negative impacts associated with these development projects would be minimal.

Recreation and Public Use

Overall, the supply and quality of recreational opportunities would increase as a result of the proposed management of this property. The master plan proposes redevelopment of existing semi-primitive campsites, a new self-guided nature trail and primitive hiking trail.

In the past, indiscriminate camping occurred on the flowage at approximately 54 sites. These sites had no toilet facilities, and bank erosion from foot traffic was significant at many locations. Under the proposed plan, 35 campsites would be designated and developed with box latrines and erosion controls. Both the reduction in the number of sites and the environmental improvements would significantly reduce the risk to public health and water quality.

¹³ Chapter NR 150 Environmental Analysis and Review Procedures for Department Actions establishes the Department's requirement for preparing this document.

The reduction in the number of campsites would provide additional benefits, including increased solitude for campers and reduced visual and ecological impacts from campsite development. With fewer campsites available under the plan there would be a reduction of camping capacity. However, flowage managers report that this would only impact use on the opening weekend of fishing season and the holiday weekends of Memorial Day, July 4th and Labor Day, the only peak use times when campsite occupancy has been above the proposed 35 sites.

The new proposed trails would primarily follow existing logging roads. Therefore, new ground disturbance would be minimal

Public roads through the property are limited to the eastern side of the property. Public motorized access would continue to be limited and slightly reduced beyond the level allowed by past landowners. Specifically, vehicle access to the Iron Gate Road would be reduced from 3.8 miles to 2.3 miles. This action would increase the size of the relatively large non-motor area on the southern part of the property, enhancing opportunities for remote area, non-motorized recreation.

The plan would create or improve several small parking lots. There would be minimal soil and vegetation clearing. Expansion and improvement of visitor parking on the property would reduce side-of-the-road parking, improving public safety.

Resource Management

The main purpose of vegetation management under the plan is to preserve the unique scenic aspect of the undeveloped, wooded shoreline, and to promote greater diversity of age classes and tree species. Short-term effects on vegetation include the conversion of some stands of short-lived early successional tree species (e.g. aspen) to longer-lived, later successional trees (e.g. white pine, red pine and oak). Approximately 3,500 acres (20%) of the property would be converted from timber production to more lightly managed scenic areas or managed old-growth forest. An emphasis on the production of forest products would continue on the majority of the acreage, but with increased diversity. Over time the range of products would shift from nearly all pulpwood under the past owners to a mix of pulpwood and saw-timber.

The long-term effect of the proposed management would create a forest of large old-growth pine, mixed hardwood and diversified age classes of aspen. Large live cavity trees, standing dead snags and fallen trees would be present in and around the flowage.

Wildlife resources would be affected over the long-term by the vegetative management on the property. Maintaining an aspen/birch component would maintain those species that rely on early successional stages of forest growth, including popular game species such as white tailed deer and ruffed grouse. Some non-game species would change as the later successional stages occur on other parts of the forest. Furbearer populations are expected to remain stable. Diverse forest stands would provide for a continued wildlife species diversity. Wildlife species that use the waters of the flowage are expected to remain stable or increase with the planned protection of the shoreline.

Utilizing the stockpiled gravel from the existing gravel pit in the southeastern part of the property would have short-term negative impacts of dust and noise during the loading and hauling

operations. However, there is a long-term positive impact of reclaiming the site to a natural condition once the stockpile has been depleted.

Endangered or Threatened Species

Federal and state endangered, threatened or special-concern species would receive long-term protection and enhancement as a result of the property's management and status as a scenic waters area. The lack of intensive development and the encouragement of old-growth forest characteristics along the shoreline would have the effect of perpetuating and enhancing existing conditions favoring the use of the flowage area for nesting, roosting and feeding by bald eagle and osprey. The maintenance of good deer habitat in a large undeveloped tract without public road access would provide part of the essential habitat for the wolf packs in the area.

Historical and Archeological Features

No known historic or archeological features would be harmed by the proposed plan. Appropriate surveys would be done prior to construction of facilities to assure no unknown sites would be impacted.

Water Quality and Aquatic Resources

Continued maintenance of the lands around the flowage in a forested, undeveloped state would have a strong positive effect upon the long-term maintenance of the flowage's outstanding water quality. The proposed forest management activities would have minimal impact on water quality. All timber harvesting along the shorelines and near wetlands would be done following Best Management Practices for Water Quality. The proposed addition of bank protection measures to reduce erosion and latrines at all campsites would provide a long-term benefit to water quality.

The operation of the dam and water level management is the responsibility of the WVIC and is regulated by the terms of their FERC license. Additionally, management of the fishery and wildlife on WVIC owned lands is covered by management plans that are part of the license agreement. These management plans are coordinated with, but are not part of, the Department's Willow Flowage Master Plan.

Economic Effects

The local tourism economy may see positive impacts due to a small increase in numbers of visitors to the area. The Willow Flowage has been a well-kept secret by local residents and long time users of the property. The wide spread public information resulting from the state purchase of the land has created more interest in the property. Overall, there would be little change in the economic activity from forest management as the majority of the area would continue to produce forest products and harvests would occur each year. Over time there would be a gradual shift to more diverse products, including some higher value saw-timber.

Fiscal EffectsEstimated Costs of Development

The following are property development projects known at the time the plan was developed. Some projects may be proposed throughout the life of the master plan that are unknown at this time, but are consistent with the plan. All costs shown are estimates from the 2001-2003 capital development cost estimate worksheets. Actual cost at time of construction may increase due to inflation.

FIGURE 2: Estimated costs of development for the Willow Flowage and lands within the Great Addition.

Boat Landings	
Dam Site - New gravel parking lot with 15 car/trailer parking spaces, gravel access road	\$65,000
Renovate Sportsman's Landing - 1 mile of 1-lane gravel road with pull-offs, 8 car/trailer gravel parking spaces	\$130,500
Trails	
Nature Trail - 2.2 miles	
10 car parking lot, informational kiosk, trail surfacing material, benches, signs and posts	\$35,000
Primitive Hiking Trail - 4.5 mile trail	
6 car parking lot and informational kiosk, signs and posts	\$15,000
Drinking Water	
Provide at least one well and hand pump for drinking water	\$29,000
Pit Toilet - WVIC Boat Landing area - 4-Unit	\$45,000
Camping	
Island and shoreline single and group campsites (site prep, box latrines, fire rings & tables)	\$56,900
Accessible campsite development	\$14,000
Island maintenance	\$25,000
Site Reclamation	\$25,000
Signs	\$10,000
Gates	\$15,000
Storage/Service Building	\$130,000
Public Road Maintenance (per year)	\$2,500
Total Estimated Development Costs:	\$597,900

Estimated Property Operations Budget**FIGURE 3:** Estimated operations budget.

One Full-time Property Manager (including fringe benefits)	\$50,000
One full-time Technician (including fringe benefits)	\$40,000
Two Limited Term Employees (including fringe benefits)	\$19,000
Yearly Operations Costs, Supplies and Services	\$32,000
Vegetative Management – Forestry and exotic species identification and control	\$10,000
Total Estimated Annual Operations Costs:	\$151,000

Significance of Cumulative Effects

The plan would have positive cumulative environmental effects considering undeveloped shoreline, large blocks of remote land and areas with diverse timber types and old forest wildlife habitats are limited in the region.

Significance of Risk

There are very low risks associated with the proposed management and development of the Willow Flowage property. The risk of uncontrolled fire would be low. The use of prescribed fire would be used under highly controlled circumstances by trained and experienced technicians. Prescribed fire would be used only in limited areas, such as on peninsulas, where it could be readily contained. A network of logging roads would remain in place to be utilized for general fire control purposes. The risk of water pollution from the latrines is low. All campsite latrines would meet current standards, therefore correcting a significant, prior existing health hazard.

Significance of Precedent

Approval of this management plan would not significantly influence future decisions on other Department property master plans. Each property is unique and goes through its own rigorous planning process, including public involvement. This management plan is consistent with Department policies and with established vision and goal statements for the property.

Significance of Controversy Over Environmental Effects

Many management actions of this master plan are expected to create little or no controversy. Throughout the planning process, the Department incorporated a number of public involvement techniques. The public helped develop and select the preferred alternative and was given opportunities throughout for review and comment (Refer to Chapter 6 for a summary of public involvement). The proposed management and public use generally continues traditional uses and purposes of the flowage and its surrounding land while reducing or eliminating the negative environmental effects of a number of past management and use practices.

The land will continue to be open to public access for recreation, including all types of hunting. The traditional practice of semi-primitive camping on flowage islands and shoreline will continue, however, at a somewhat reduced level primarily impacting holiday weekend campers.

Disagreement with the policy on not adding additional snowmobile or ATV trails has been expressed during the planning process. However, limiting these uses to existing approved trails represents a consistency in management practices with the previous owners and neighboring landowners. Regional opportunities for ATV and snowmobile use exist. There is a 40-mile system of ATV trails in the area provided by Oneida County. Additionally, an existing snowmobile trail, which passes through the southeastern portion of the Willow Flowage, is part of the interconnected Oneida County snowmobile trail system. Oneida, Vilas, Iron, Price and Lincoln counties provide thousands of miles of groomed snowmobile trail. Further, expansion of motorized uses would conflict with the property goal of providing remote, low impact recreation.

Public motor vehicle access into the property remains limited. Public roads surround the property with no direct access to the property except for the Iron Gate Road. Over the history of this road it has been both open and closed to public use. Since the state has owned the land, the gate has been open seasonally to a second gate mid-way through the property.

This plan calls for relocating the second gate one and one-half miles further to the east, thereby shortening the length of open road. Some people would like the road to go all the way through to McCord Road, some people would like the second gate to stay where it is, and some people would like the gate on County Y closed permanently. The proposed new location of the gate one and one-half miles east of the current second gate is a compromise to allow limited public access to the area and create a large walk-in only area south of the flowage between County Trunk Y and McCord Road.

Conclusion

This master plan will not cause adverse impacts to the Willow Flowage or the lands surrounding it. The plan will provide positive ecological and social benefits to the region by maintaining an undeveloped natural appearing shoreline and a large land area without public roads. Similar areas are limited in the region. Further, the proposed plan will enhance and diversify wildlife habitat and broaden the production of sustainable forest products. It will provide continued opportunities for popular recreation activities in a remote setting, including hunting and water-based, semi-primitive camping.

Compliance with the Wisconsin Environmental Policy ActDecision

In accordance with s.1.11, Stats., and Ch. NR 150 Adm. Code, the Department is authorized and required to determine whether it has complied with s. 1.11, Stats., and Chapter NR 150, Wis. Admin. Code.

EIS Process Not Required

The attached analysis of the expected impacts of this proposal is of sufficient scope and detail to conclude that this is not a major action that would significantly affect the quality of the human environment. In my opinion, therefore, an environmental impact statement is not required prior to final action by the Department on this project.

Signature of Evaluator

Date Signed

Noted: Bureau Director

Date Signed

Number of responses to news releases or other notice:

99

Certified to be in Compliance with WEPA

Director of Bureau of ISS (or designee)

Date Signed

Notice of Appeal Rights

This notice is provided pursuant to Section 227.48 (2), Stats. If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed. For judicial review of a decision pursuant to Sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.

To request a contested case hearing pursuant to Section 227.42, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department of Natural Resources. The filing of a request for a contested case hearing is not a prerequisite for judicial review and does not extend the 30-day period for filing a petition for judicial review.

Note: Not all Department decisions respecting environmental impact, such as those involving solid waste or hazardous waste facilities under Sections 144.43 to 144.47 and 144.60 to 144.74, Stats., are subject to the contested case hearing provisions of Section 227.42, Stats.

This notice is provided pursuant to Section 227.48(2), Stats.

CHAPTER FOUR: ALTERNATIVES AND THEIR ENVIRONMENTAL IMPACTS

DEVELOPMENT OF ALTERNATIVES

A master plan alternative is a grouping of a number of compatible options for resource management, recreational development and public use of a property. The content of an alternative should be compatible with the property designation, the draft vision and goals, the property capabilities and the regional analysis.

How Alternatives were Developed

The initial step in the alternatives phase was to communicate information on the history and resources of the Willow Flowage. To accomplish this, the Department provided the public with fact sheets about the property and scheduled an Issues Forum at the Minocqua Town Hall. The purpose of the Issues Forum was to provide information so everyone had a reasonable understanding of the existing resources and the resource capabilities of the land and water of the Willow Flowage. Each presentation by Department experts was followed by a question and answer session.

At the meeting that followed the Issues Forum, which was also held in Minocqua, Department staff worked with the public to begin developing alternatives for the property. The discussions focused on the resource management and recreational opportunities people wanted the property to provide as well as the experience they hoped to encounter. The public was reminded of the need to consider the property's vision and goals when developing the alternatives. The Department gathered valuable information from this meeting, but still required an additional meeting to continue the discussion.

Prior to this next meeting, the Department master plan team asked the public to tell us what format they would like to see. The majority asked that the Department develop several draft alternatives based on information from previous meetings, public input and capabilities of the property. This would provide a basis for review, discussion and improvement of the alternatives.

The Department presented three draft alternatives for review and revision at the Minocqua meeting. The alternatives had some common elements:

- Scenic Resources Management Area: Maintain the existing character of the undeveloped shoreline.
- Special Management Area: Utilize existing stockpile of gravel and reclaim the site.
- Assign a Type 3 Recreational Use Setting Subclassification for the Scenic Resources Management Area

- In consultation with tribal governments, manage the land and other natural resources to provide for the exercise of Chippewa Treaty rights in accordance with applicable law.
- Recreational developments will comply with the Americans with Disabilities Act (ADA) for programs and facilities.
- No change in requirements for hunting, trapping or fishing.
- No designated off-road bike trails will be provided. Revise NR 45 to allow mountain biking except where posted against.
- Provide one drinking water well on the property.
- Trash removal will be via carry-in/carry-out; no on-site disposal will be provided.
- Firewood gathering will be allowed while camping. Use of chainsaws or cutting live trees or brush is prohibited.
- Developments must be kept 330 feet away from eagle and osprey nest sites.
- Signs are limited to small signs designating campsites, informational signs at the boat landings and signs to meet requirements of s. 23.115, Stats. for property map and designated use areas.
- The boundary expansion should include:
 - The Tomahawk River Pines State Natural Area
 - 1,200 acres on the west side of the property
 - 5,000 acres on the north
 - Wording to propose land trades or acquisitions with the Board of Commissioners of Public Lands for lands within the boundary
- Water levels are regulated by the operation plan in the Wisconsin Valley Improvement Company's Federal Energy Regulatory Commission license.
- Wisconsin Valley Improvement Company retains restrictive covenants on lands surrounding the Willow Flowage.

The following sections identify the key differences between the alternatives, their impacts and the basis for selecting the preferred alternative.

ALTERNATIVE ONE

This alternative is comprised of two land management classifications: Scenic Resources Management Area and Special Management Area. The emphasis is on aesthetics, maintaining a high natural setting and providing minimal, primitive recreation opportunities. The property would be managed to maintain or create a high feeling of remoteness and solitude.

Access would be limited to the public roads and existing boat landings. Only walk-in access would be permitted on the Iron Gate Road. No additional nature, hiking, ATV or snowmobile trails would be designated. However, motorized use would be permitted on the existing ATV and snowmobile trails. Camping would be allowed at designated sites only, which would include 20 single-unit primitive campsites.

No forestry practices would be incorporated with this alternative – let nature takes its

course. This alternative does not make use of the timber resource and does not include timber salvage after natural storm events. Department foresters predict it will take 80 to 150 years for the forest to go through successional stages to climax forests of red and white pine and red maple.

This alternative does not include any wildlife management. Department staff anticipate this will cause deer and ruffed grouse populations to decline over the long-term (40-100 years) as the forests change to climax species.

With this alternative trees and shrubs would be allowed to grow up over time. As a result, the network of logging roads would be lost for management activities and fire control.

Impacts of Alternative One

While this alternative meets the established vision and goal statements regarding maintaining the natural scenic beauty and solitude of the Willow Flowage, it does not address the statements for providing access and managing for a diverse range of flora and fauna. Limiting access offers the most aesthetic experience of the three alternatives, but it also presents concern regarding resource damage caused by illegal ATV use. This alternative could require additional resources for enforcement. The potential also exists that limited access could reduce the number of hunters, which in turn would cause the deer population to increase over the short-term (present to 40 years) to problematic levels.

The lack of forest management negatively impacts both flora and fauna by decreasing diversity. It also increases the risk of fire hazard, the concern for disease and the potential for blowdowns. Further, allowing the network of logging roads to grow over causes problems for management activities and safety concerns in the case of fire control.

The socio-economic impacts of this alternative are difficult to determine. Some tourism may be lost due to limited access. However, providing a non-motorized recreation area may draw silent-sport enthusiasts whose needs are not being met regionally. The lack of forest management may impact local jobs, however, forest production on the Willow Flowage is not a major contributor to the regional economy.

Comments we received from the public reflect the concern that Alternative One is too restrictive, providing little opportunity for people to access or use the property. Another concern is that a “do-nothing” approach to resource management is not wise management for the forest or wildlife. Public comments did show support for allowing the area to remain as natural and scenic as possible, for limiting motorized use and for providing a quiet, non-motorized use area.

Impacts of Alternative One on Treaty Resources¹⁴

There would be an increase in the pine community type. Generally, there would be a negative impact on deer and other early successional species and a positive impact on mature forest species. There would be less access provided, and therefore, fewer chances of introduction of invasive exotic species.

ALTERNATIVE TWO

This alternative is divided into four land use classifications: Scenic Resources Management Area, Forest Production Area, Native Community Management Area and Special Management Area. The overall emphasis of this alternative is to provide resource management activities and recreation opportunities that maintain a high natural setting and maintain public use similar to current levels. Aesthetic management practices are a high priority. Users can expect a feeling of remoteness and solitude.

Motorized access to the property would be along public roads, the Iron Gate Road to the second gate and at existing boat landings. Improvements would be made to the existing boat landing and parking lots. No additional ATV or snowmobile trails would be provided.

This alternative creates a nature trail from Willow Dam Road to Indian Shack Point and back. A hiking trail would continue from the nature trail around North Bay to Peterson Bay. Additionally, a primitive hiking trail would be developed from the second gate on Iron Gate Road to Indian Point and on to McCord boat landing. A loop hiking trail would be developed from Iron Gate Road to the flowage and back. Camping would be permitted at designated sites only. This alternative designates 30 single-unit semi-primitive campsites and five group campsites.

Forestry management would consider aesthetic management practices a high priority to maintain an undeveloped, natural appearing shoreline. The Department would manage for diversity of forest stands with 3,000 to 4,000 acres of aspen/birch; 1,300 to 2,200 acres of red and white pine; and 500 to 1,000 acres of red oak, red maple, hemlock and fir-spruce. This alternative manages the aspen/birch and converts some of the acreage to red and white pine, which over time will produce saw logs. Additionally, it provides for timber salvage after natural storm events. Department staff predict that maintaining the aspen/birch will maintain the deer and ruffed grouse populations. However, some non-game species will change as parts of the forest age.

Developments with this alternative include box latrines at the semi-primitive campsites and pit toilets at the new nature trail parking lot on Willow Dam Road. An on site storage building for property operations would also need to be built.

¹⁴ A summary of impacts on treaty resources was provided by the Great Lakes Indian Fish & Wildlife Commission (letter dated July 27, 2000). Overall the summary shows that there are few if any impacts on treaty resources, especially in Alternatives 2 and 3. This area is currently experiencing a high degree of use and forest management. As the alternatives continue these practices, the anticipated changes will be less. The Department concurs with GLIFWC's analysis of the impacts on treaty rights.

This alternative retains the network of logging roads for management activities, for fire control purposes and for non-motorized recreation.

Impacts of Alternative Two

Alternative Two most closely meets the vision and goal statements. However, forest production and motorized access to the second gate on Iron Gate Road negatively impact the aesthetic qualities and solitude of the Willow Flowage. While allowing motorized use to the second gate increases the recreational opportunities, it negatively impacts the resources and the experience. It also could negatively impact wolves and other wildlife that are sensitive to human activities.

One advantage to forest management includes improving the diversity of flora and fauna, which improves the overall health of the forest community. The stands would reach a climax species composition in a shorter time than if not managed. Forest management would reduce the size of clear cuts and would maintain the network of logging roads for management activities, fire control and non-motorized recreation.

Management associated with this alternative should have little impact on the local economy. Some acreage would be converted from short-lived species (aspen) to long-lived species (pine), but the effects should be minimal. Tourism should remain similar to current trends. Property operation costs may increase given the additional costs of developing and maintaining trails and campsites.

Comments received from the public show support for incorporating sustainable forest management practices and for providing limited access for all users. Those who responded believed Alternative Two is most consistent with what currently exists on the property. The main concern against Alternative Two is that there is too much emphasis on forest production and not enough on biodiversity.

Impacts of Alternative Two on Treaty Resources

There would be an increase in the pine community type, at least near the flowage and in the natural areas. Since this alternative maintains some of the forest management practices currently underway, there would be few impacts on treaty resources. There would be some benefit to terrestrial furbearers and a potential increase of balsam fir. Access would be similar to present except for the closure of the Gate Road. Introduction of exotics would be similar to that which occurs presently.

ALTERNATIVE THREE

This alternative consists of three land use classifications: Scenic Resources Management Area, Forest Production Area and Special Management Area. The overall emphasis of this

alternative is to provide resource management activities and recreation facility improvements that maintain a moderate natural setting and increase public use opportunities. While not a high priority of this alternative, users may still experience a feeling of remoteness and solitude.

Access would be increased by extending Iron Gate Road through to McCord Road. Motorized traffic would be permitted. Two new boat landings would be developed. One of the landings would be located on the south of Indian Bay and the other would be to the north on the Tomahawk River. Additionally, improvements would be made to the existing boat landing and parking lots. Camping would be allowed at designated sites only, which includes 50 single-unit primitive and six group campsites.

With this alternative, the Department would develop a nature trail from Willow Dam Road to Indian Shack Point and back. A hiking trail would continue from the nature trail around North Bay to Peterson Bay and back. Additionally, the Department would create a loop trail from Iron Gate Road to the flowage and back. The existing designated ATV and snowmobile trails would remain in place. With this alternative, ATV and snowmobile traffic would be permitted to use the Iron Gate Road from the existing ATV trail through to McCord Road.

Aesthetic forest management practices are a high priority to maintain an undeveloped, wooded, natural appearing shoreline. However, aesthetic considerations on backland areas are a low priority. Even-aged large block management would occur. The property would be managed for 3,900 to 4,800 acres of aspen/birch and 875 to 1,750 acres of red and white pine. This alternative maintains the maximum acres possible in the aspen/birch timber type. Timber salvage would be permitted after natural storm events. The network of logging roads would be retained for management activities, for fire control purposes and for non-motorized recreation.

Department staff predict that maintaining aspen/birch timber type would support the deer and ruffed grouse populations. However, some non-game species would change as parts of the forest age.

Developments with this alternative include box latrines at the primitive campsites and pit toilets at the new nature trail parking lot on Willow Dam Road. An on site storage building for property operations would also need to be built.

Impacts of Alternative Three

Alternative Three meets the goal of providing user access, but in the process contradicts the vision and other goal statements established during the planning process. The negative impacts of extending Iron Gate Road through to McCord Road include disturbing the native vegetative and wildlife habitats, increasing the potential for erosion, and changing the overall character of the property and experience users seek.

Although managing the area for forest products supports the deer and grouse habitat and

makes economic use of the forest, it does not promote diversity nor the solitude or aesthetic qualities users say are important. Intensive logging also negatively impacts the roads and trails by compacting the soil and increasing potential for erosion and run-off.

This alternative has the least public support. Those in favor of Alternative Three, though, believe it provides the best opportunities for access and use of the property, especially by extending Iron Gate Road through to McCord Road. The main concerns against Alternative Three focus on the negative impacts of increased access and overall use, and on the emphasis on forest production. Comments include that Alternative Three is irresponsible, does not meet the established vision and goals and violates the general desire of “keep it as it is.”

Impacts of Alternative Three on Treaty Resources

This alternative would be the most neutral in its anticipated changes. There would be a small decrease in cool water fisheries due to increased angling pressure. There would be a potential for proposed increase in access, with more hiking and motorized trails. This would bring along with it an increase in colonization of invasive exotic species.

EVALUATION OF THE ALTERNATIVES

Willow Flowage master plan team members evaluated the impacts of the three management alternatives for physical, biological and socioeconomic impacts on the property and region. Department “experts” were asked to evaluate the alternatives and their impacts in relation to the previously agreed upon property draft vision and goals. Additionally, Department staff mailed the three alternatives to the entire mailing list asking for their comments. The Department followed up with public meetings in Tomahawk, Wausau and Madison to present the alternatives and solicit public response. The master plan team used the information gathered from the internal and external reviews to consider the cumulative impacts of each alternative and to proceed with the selection of a preferred alternative.

SELECTION OF PREFERRED ALTERNATIVE

Selection of the preferred alternative is based on public comment, consistency with vision and goal statements, consistency with Department policies, the regional analysis and capabilities of the land. The Department selected a version of Alternative Two as the preferred alternative.

Alternative Two was revised as follows:

- Relocate the second gate on the Iron Gate Road to approximately 1.5 miles east of its current location and add a six car parking lot near the gate.
Rationale: Some people propose keeping the gate closed at Y to limit motorized public access, as has historically been the case. Some people want a road built all the way

through to McCord Road. Many people want an area designated for low impact recreational use. Relocating the gate creates an area approximately four miles by three miles where recreational access is non-motorized.

- Remove proposed designated recreation trails on the south side of the property.
Rationale: The nature trail and the primitive hiking trail on the east side of the property are where most of the day-visitors will be. People that want a more rustic hiking opportunity will still be able to hike on the south side of the property without designating and maintaining trails.
- Add a parking lot and primitive hiking trailhead to the west side of Cedar Falls Road near the southwestern corner of Skunk Lake.
Rationale: Land acquired in the Great Addition provides an opportunity for trail access directly from Cedar Falls Road. Having the trailhead at this location will preclude the necessity of crossing a beaver dam and building a boardwalk across a wetland for the trail.
- Designate 680 acres along the Tomahawk River north of the flowage to be included in the Tomahawk River Pines State Natural Area.
Rationale: The entirety of the state owned river corridor north of the flowage will be managed as part of the natural area.
- Enlarge the acquisition boundary to include an additional 16,891 acres (Refer to Map 2 for proposed expanded boundary.).
Rationale: It is important to include the 1,200 acres surrounding the west side of the flowage to protect the undeveloped shoreline. The shoreline of the river corridor below the dam is also important for water quality protection. The larger block of land to the northwest and north is important for resource management purposes on a landscape-scale and to protect wetlands to maintain the flowage's water quality.

The preferred alternative most closely exemplifies the vision and goal statements and the expectations of the public. Management prescriptions for the Willow Flowage Scenic Waters Area are compatible with the property's capabilities and help define the flowage's niche. Refer to Chapter Three for an Environmental Analysis of the preferred alternative.

CHAPTER FIVE: SUPPORTING OR BACKGROUND INFORMATION

REGIONAL ANALYSIS

Land Ownership and Land Use Patterns

Land Ownership

Located in north central Wisconsin in Oneida County, the Willow Flowage Scenic Waters Area is surrounded largely by county and industrial forest land. Map 2 illustrates the project area ownership. On a larger scale, the region is defined by the neighboring counties of Lincoln, Price, Iron, and Vilas (Refer to Map 1).

Public lands within this region include the Nicolet and Chequamegon National Forests, Northern Highland American Legion State Forest, Turtle Flambeau Flowage Scenic Waters Area and county forest lands. The lure of the northwoods is causing a strong pressure for shoreline ownership in northern Wisconsin and for private ownership of blocks of land generally in 40 acre increments. The industrial forests surrounding the Willow Flowage are in danger of subdivision as the land is starting to be sold off in smaller parcels. Figure 4 indicates the composition of public and private land owners in the region.

FIGURE 4: Willow Flowage regional ownership.

County	National Forest	Tribal Lands	State	County/ Municipal	Forest Industry	Private Owner	Non-Forested	TOTAL
Oneida	10,904	0	61,531	74,145	211,063	225,576	207,580	790,799
Vilas	54,500	45,471	128,896	38,019	6,940	215,266	162,409	651,501
Price	150,833	0	22,261	82,197	62,068	327,011	174,131	818,501
Lincoln	0	0	3,500	92,785	59,685	258,346	166,485	580,801
Iron	0	9,100	41,660	175,828	76,130	141,452	144,030	588,200
TOTAL	216,237	54571	257,848	462,974	415,886	1,167,651	854,635	3,429,802

Land Use Patterns

Commonly referred to as the “northwoods,” this area is characterized as rural, heavily forested, and dotted with a seemingly endless supply of lakes and streams. As cited in a study for Wisconsin’s Northern State Forest Assessments, the resident population for the region (as defined by Forest, Iron, Lincoln, Oneida, Price and Vilas counties) is approximately 135,000 (WDNR 1999 Socioeconomics). However, this number is deceiving considering seasonal populations in communities throughout the region often far exceed resident populations.

Northcentral Wisconsin represents a primary destination for vacationers and recreational homeowners originating from outside the region. Recreational homes comprise a surprisingly large share of the local housing stock. In the six Wisconsin counties studied, 1,990 seasonal and occasional use housing units comprised roughly 42% of the total housing units (ibid.). These are owned and used by over 33,000 recreational homeowners and their families throughout the year with the primary use occurring during the summer months.

Additionally, a recent article indicated average real estate sales prices for Iron, Vilas, Forest, Florence, Oneida, Price, Sawyer, Lincoln and Langlade counties rose from \$89,444 in 1997 to \$106,000 in 1999, an 18.5% increase (Derus 2000). The article states this increase is actually lower than vacation-land realty since the 18.5% lumps together recreation properties along with more modest local offerings. In the past year the property value growth rate for this nine-county area is nearly double the state value – 12.1% versus 6.5%.

Considering the accelerated growth pressures and the large seasonal influxes of daytrippers and short-stay vacationers, it becomes readily apparent that tourism, broadly defined, represents economic power to generate significant local retail and service demands.

Socio-economic Conditions

Wood based and tourism-sensitive sectors comprise a large portion of the region's economy. Approximately 30% of the regional output and 27% of the region's jobs are related to either wood products or tourism. Comparatively, the region is more reliant upon the wood products and tourism sensitive sectors for regional economic activity than is the state as a whole. Statewide estimates identify wood-products and tourism sensitive sector output as comprising only 12% of state output and 18% of the statewide jobs (WDNR 1999 Socioeconomics).

The values of rural forested areas are a benefit to both the tourism and forest industries. The tourism industry needs to recognize the inherent values of forested lands as a basis for demand while forest managers and the forest product industry need to continue their efforts at managing forests in a scientifically sound and tourism sensitive manner. An important future challenge of forest managers and recreation planners is to manage forest lands such that compatible alternative uses are maximized.

Regional Recreation Resources

In Wisconsin, tourism is one of the biggest and fastest growing industries. Wisconsin has a total of 55 state parks, 568 county parks, thousands of local parks, hundreds of privately owned resorts, and an increasing number of privately owned outdoor and indoor water parks. Areas for public recreation include county forests that total more than 2.3 million acres in 28 counties, 5 northern and 5 southern state forests, 7 state historical sites,

numerous state fish and wildlife areas, and 2 national forests. The state contains 3,000,000 acres of public hunting lands; 60,000 campsites; 15,000 inland lakes; 15,200 miles of snowmobile trails; 12,500 miles of streams; 3,597 miles of hiking trails; and, 1,236 miles of ATV trails (USDA 2000). A number of these recreation opportunities are provided within the region of Oneida, Vilas, Iron, Price and Lincoln counties.

Northern Highland/American Legion State Forest

At 225,000 acres, this largest state-owned property has an annual visitation of approximately two million. Recreational opportunities include: 870 campsites in 18 family campgrounds, two group campgrounds, and 70 canoe sites; 7 developed picnic areas; cross country skiing on 8 trails (of which 4 are groomed) totaling 40 miles of opportunities; over 400 miles of groomed snowmobile trails; 30 miles of designated and over 800 miles of undesignated off-road biking trails; one nature center and four self-guided nature trails; over 70 miles of designated hiking trails with literally hundreds of miles of undesignated trails, logging roads and other roads for hiking; and, endless opportunities for hunting, fishing, trapping, sight-seeing, berry picking and other outdoor activities.

Bearskin-Hiawatha Multi-Use Trail System

This trail complex is within 15 miles of the Willow Flowage. The Bearskin Trail is 18 miles in length from downtown Minocqua to Highway K on the south. The Hiawatha Trail extends 6 miles north from Tomahawk toward the Bearskin Trail. A feasibility study has been completed to link the trails to connect the communities of Minocqua and Tomahawk with a 30 mile long hiking, biking, snowmobiling and cross country ski trail.

Turtle-Flambeau Scenic Waters Area

Located in Iron County approximately 45 miles from the Willow Flowage, this state property offers: 60 campsites, which include 17 family, 40 remote, 2 group and one accessible site. It also offers a voluntary quiet area on 1/5th of the flowage, which is a slow no wake zone.

Chequamegon - Nicolet National Forest

The east boundary of the Chequamegon is located just west of the Willow Flowage. The Nicolet is to the northeast of the property. Recreation opportunities include: 1,179 campsites in 47 family campgrounds; over 800 miles of snowmobile trails; over 150 miles of ATV trails; 200 miles of hiking trails; 180 miles of cross country ski trails; 15 miles of equestrian trails; over 200 miles of hunter walking trails; and, opportunities for hunting, fishing, sight-seeing, berry picking and other outdoor activities.

Other Regional Opportunities

Oneida, Lincoln, Price, Iron and Vilas Counties provide nearly 500,000 acres of county forest land with designated trails for snowmobiling and ATV riding, camping, hiking,

biking, hunting and many other outdoor activities.¹⁵

Over 415,000 acres of industrial forest lands are within this five-county area. Although considered private land, if managed under the Managed Forest Law, the public has access to the land for hunting, fishing, hiking, sight-seeing and cross country skiing (Chapter 77.83(2)(a))¹⁶.

Winter Park, a private cross country ski area, is located immediately north of the Willow Flowage boundary and offers over 60 miles of cross country ski and hiking trail opportunities.

Ecological Capability

Ecosystem Setting

The Willow Flowage lies within the influence of three distinct ecosystems, but has most in common with the Northern Highland Pitted Outwash. The unique ecosystems are described as follows:

The Northern Highland Pitted Outwash (Subsection 212Jm) - This eco-region abuts the Willow Flowage on the west, north and east. This region extends from the Winegar Moraine along the Upper Michigan border to the Harrison Hills in NE Lincoln County. It is also common to the Northern Highland-American Legion State Forest and most of the Oneida and Vilas County Forests in addition to the northern units of the Lincoln County Forest.

The topography varies from flat outwash plains to collapsed outwash plains of sand based soils. Numerous kettle lakes are contained within this region. Many streams originate in this outwash plain including the Wisconsin and Tomahawk Rivers.

Vegetation cover types are dominated by white pine, jack pine, red pine, aspen, paper birch and red and pin oak. This eco-region can be droughty, but contains numerous, scattered peat wetlands. The region is basically considered a pinery and contained a rich mixture of white, red and jack pine prior to European settlement. Much of the region still contains abundant pine; however, aspen and paper birch increased substantially early in this century following land clearing and fires. White and red pine dominate much of the Willow Flowage shoreline in this region with aspen more prevalent on the backland.

The Winegar Moraine (Subsection 212Jc) - This eco-region abuts the Willow Flowage along the southern edge. It extends from northern Washburn County easterly through southern Bayfield, northern Sawyer, southern Ashland, Iron and northern Price into western Oneida County near the Willow Flowage. The Winegar Moraine was formed by

¹⁵ Refer to the appropriate County Forest Recreation Plan for specific recreation policies.

¹⁶ Refer to Chapter 77.83(1)(a) Closed Areas for exceptions.

the terminus of the Ontonagon ice lobe. The Moraine nearest the Willow Flowage was formed by lateral moraines between the Chippewa and Wisconsin glacial lobes.

The topography varies from hilly moraines to rolling sand outwash plains. The soils range from sandy to loamy mantled tills to sandy outwash areas. In general, the soils are finer and more nutrient rich than those to the north in the Highland Pitted Outwash.

Vegetative cover types are dominated by aspen, paper birch and northern hardwoods of maple and basswood. This eco-region is not considered a pinery, but supports some scattered patches of white pine and red pine. Aspen and maple are the predominant tree species in this eco-region. However, white and red pine are very abundant along the southern shores of the Willow Flowage. This eco-region is common to the Chequamegon National Forest along with several county forests, including Price and Oneida Counties.

The Central and Northwest Wisconsin Loess Plains (Subsection 212Je) - This eco-region lies four miles west of the Willow Flowage at its closest point. This subsection is characterized as glacial ground moraine from the Chippewa ice lobe and is composed of relatively flat topography with heavier silt and clay soils.

Vegetative cover is dominated by sugar maple, basswood and aspen and extensive alder, spruce and tamarack swamps. The ecosystem has much contrast to the lighter soils and sand based vegetation of subsections Jm and Jc. This eco-region extends across several county forests west of the Willow Flowage, in addition to portions of the Chequamegon National Forest.

Biological Diversity

The northern third of Wisconsin is part of a large ecoregion called the Laurentian Mixed Forest. It is separated from southern Wisconsin by broad changes in climate and physiology. The upland forests with loamy soils support forests of sugar maple and basswood. This is the northern hardwood forest. Common associated trees include yellow birch, white ash, eastern hemlock, red maple, balsam fir, and ironwood. The upland forests with sandy soils support jack, red, and white pine. Common associated trees include aspen, white birch, red oak, Hill's oak, and red maple. Wetland forests support tamarack and black spruce on the acid peat soils and northern white cedar or black ash on muck soils.

Young, successional forests of aspen are common in the region. Old growth forests are rare. Overall, the region's forest cover types include about 25% aspen, 30% northern hardwood, 25% forested wetlands, and 20% pine/oak/white birch mixtures. The plants and animals of the region are those adapted to extensive upland forests, forested wetlands, and a wide variety of lakes, rivers and streams. The region has approximately 350 species of terrestrial vertebrates, 30 species of major trees, and 1,200 plant species.

Unique natural resources that occur in the Willow Flowage region include the high density

of kettle lakes, headwaters for many major streams, extensive forests and extensive areas of natural forested wetlands. The Willow Flowage is of particular significance in the region because of its extensive undeveloped shoreline, mature and old growth pine forests, and large, remote forest setting with limited public road access.

Cultural Resources

Considering that people have lived in northern Wisconsin since the end of the Ice Age, it is not surprising that the region contains a richly varied array of cultural resources. In many ways these resemble the cultural resources of other parts of the state, but there are differences as well, reflecting regional adaptations to a landscape dominated by forests, lakes, and streams.

In earlier times one finds this reflected in bark covered wigwams, travel by canoe, campsites at portages, settlements by choice fishing spots such as lake inlets and outlets, fish weirs, and campsites near extensive beds of wild rice. Later there appear log cabins, trading posts where furs were exchanged, spring camps in sugar bushes, logging camps and dams, and lodges for fishermen and hunters attracted to the natural resources of this region.

Other significant cultural resources include burial mounds, cemeteries, sacred springs, and places of worship. The archaeological remains in the area of the Willow Flowage have been severely impacted by inundation, and generally lack sufficient integrity to be considered archaeologically significant at the regional level.

BACKGROUND INFORMATION

Proposed Project Boundary

The land ownership within the proposed expanded boundary is shown in Figure 5 on page 51. Major landowners within the expanded boundary are the Department, industrial forest interests, the Board of Commissioners of Public Lands and private lands held by approximately 100 private landowners.

Minocqua Township is on record supporting additional state land acquisition to "try to save as many forest lands as we can." There is a threat of fragmentation of the forest communities if the land is sold off in small parcels. Purchasing the land would promote management on a landscape scale and prevent adverse affects on the wolf populations that require large areas without roads. The covertype of the land within the expanded boundary is approximately the same composition as the land within the current ownership boundary, which is 70% upland and 30% lowland.

FIGURE 5: Land ownership within the proposed expanded boundary.

DNR Owned Lands (acres)	
Original Purchase in 1997	8,720
Great Addition in 1999	7,054
Tomahawk River Pines State Natural Area	360
Year 2000 Purchase	40
TOTAL	16,174

Non-DNR Lands (acres)				
Township	BCPL	Ind. Forest	Private	Total
Lynne		1,365	34	1,399
Little Rice	550	985	476	2,011
Cassian	30	715	295	1,040
Minocqua (West)	1,190	3,535	610	5,335
Minocqua (East)	400	7,115	1,330	8,845
TOTAL	2,170	13,715	2,745	18,630

Total Acreage Within the Proposed Expanded Boundary	34,804
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Future Land Acquisition Costs

The future land acquisition costs in Figure 6 below are estimates based on the year 2000 market values. The future costs of the land will have to take into account inflation and market values at the time of purchase. The Wisconsin Department of Revenue statistics for a three year period on average show increases in property costs for Minocqua at 19.5%, Little Rice at 13.4% and Lynne at 18%.

The Department is obligated to follow state law on preparation of appraisals by certified licensed appraisers for all land being considered for purchase. The Department will pursue acquisition within the proposed expanded boundary of the Willow Flowage on a willing seller basis only. If the Department were to purchase all of the remaining lands within the proposed expanded boundary in the year 2000, the estimated acquisition cost for 18,630 acres is \$14,692,400.

At times, it may be in the interest of the Department and the landowner for the Department to acquire less than fee-title ownership of a property within the boundary. The Department has a number of easement alternatives available and has the opportunity to acquire only specific rights to any given property for a fee on a willing-seller basis.

FIGURE 6: Future land acquisition costs.

Acquisition Costs of Non-DNR Lands Within the Proposed Boundary				
Township	BCPL	Ind. Forest	Private	Total
Lynne		\$922,500	\$40,800	\$963,300
Little Rice	\$378,000	\$842,500	\$506,600	\$1,727,100
Cassian	\$18,000	\$733,500	\$234,000	\$985,500
Minocqua (West)	\$1,059,000	\$2,829,000	\$732,000	\$4,620,000
Minocqua (East)	\$312,000	\$4,708,500	\$1,376,000	\$6,396,500
	\$1,767,000	\$9,724,500	\$2,889,400	\$14,692,400

Public Land and Property Taxes

When the Department acquires land for public use, it makes payments for property taxes at the same level as any other property owner. Land purchased by the Department is removed from the tax roll, but to compensate for the tax base loss, each taxing jurisdiction (town, village, or city; school; Vocational Technical and Adult Education; county, and special districts) receives an aid payment equivalent to property taxes. The aid payments for 1999 are shown in Figure 7 below.

FIGURE 7: Willow Flowage aid payments, 1999.

Township	1999 (Est.)
Cassian	\$4,829
Little Rice	\$225,467
Lynne	\$4,184
Minocqua	\$71,010
TOTAL	\$305,490

Cultural Resources

Archaeological Sites on the Willow Flowage

There are 38 archaeological sites recorded within the Willow Flowage project boundary (Refer to Appendix A for phases and a listing of archaeological sites.) Additional sites have been identified within the scenic easement area just west of the property. Most archaeological sites on the Willow Flowage have been heavily impacted by inundation and shoreline erosion. Logging and camping have also taken a toll. Intact archaeological deposits are rare.

Prehistoric artifact assemblages are typically small, and limited to non-diagnostic lithics. Local lithic materials such as quartz and quartzite are difficult to flake in a controlled manner. Hence the stone tools tend to be relatively crude in appearance.

Historic artifact scatters contain glass, ceramics, or metal items of late 19th or early 20th century age. Some of these remains represent logging camps, but many artifact scatters have such limited remains that the type of activity cannot be determined.

FERC Investigations

Most of the archaeological sites recorded around the Willow Flowage were identified as a result of an extensive survey of the shores of the flowage and islands, conducted in preparation for Federal Energy Regulatory Commission (FERC) relicensing of the dam operated by Wisconsin Valley Improvement Company. The purpose of the survey was to assess the impact of the Willow Dam on archaeological sites around the reservoir. The initial survey was conducted in October and November of 1989, by a crew from the Great Lakes Archaeological Research Center (GLARC) (Brazeau *et al.* 1990). At that time the surface elevation of the reservoir was 1,521 feet, slightly more than eight feet below the maximum pool level. The low water permitted access to extensive areas that are normally inundated.

Owing to bad weather, the crew was not able to survey eight miles of shoreline. This was later done by the Mississippi Valley Archaeology Center (MVAC). Between 1991 and 1999 MVAC spent portions of five field seasons finishing the shoreline survey and evaluating the significance of the archaeological sites that were found (Moffat *et al.* 1991, 1992; Moffat, Arzigian, and Theler 1993; Moffat 1999; Moffat and Bielefeldt 1999). Of all the sites they studied, the only one considered sufficiently significant to be eligible for the National Register of Historic Places is a late 19th century logging camp (47-On-209) located outside the Willow Flowage project boundary.

Historic Structures

The only historic structure on the property that is recorded in the State Historical Society of Wisconsin inventories is the Willow Dam, constructed in 1926. The dam was constructed, and is owned and operated by the Wisconsin Valley Improvement Company.

Additional Information

Information provided in this report reflects surveys of existing documented cultural sites. Additional undocumented sites may exist along the shoreline of the Willow Flowage and the Tomahawk and Willow Rivers. This is especially true when the water level is low exposing more of the former shoreline of the rivers.

The high probability of finding cultural resources in the vicinity of the flowage and rivers is noted here. Before any construction or mechanized logging takes place, archeological site investigations will be conducted. Appropriate measures under state and federal statutes will be taken should any cultural resources be discovered.

Wildlife Overview

The property is home to a variety of wildlife species, including rare, uncommon, game and non-game species. The wildlife of the Willow Flowage property represents a cross section of the wildlife of northern Wisconsin. In particular abundance are those species that prefer young aspen and pine forests and large, shallow, sandy impoundments (Refer to *Biological Inventory Report* for an assessment of the biological environment of the Willow Flowage Study Area and surrounding landscape.).

Game Species

Many game species, including white-tailed deer, ruffed grouse, woodcock, snowshoe hare, black bear, ducks and geese are common on the Willow Flowage. The property lies within Deer Management Unit 31. Currently the unit is at about 29 deer per square mile of range, which is significantly over the winter population goal of 19 deer per square mile of range.

Ruffed grouse are periodically abundant preferring aspen forests six to 25 years old. A limited number of sharp-tailed grouse live north of the Willow Flowage property, and a few have been observed within the south boundary of the property. Woodcock prefer young aspen forests with scattered grassy openings. Black bears are common in the region with the average black bear density at about 1 bear per square mile.

Snowshoe hare populations fluctuate greatly, with peak periods about every ten years. Hares prefer conifer lowland forests and young aspen stands as well as spruce and cedar swamps. Other furbearers present include beaver, muskrat, mink, river otter, coyotes, red fox, bobcat, fisher, raccoon, striped skunk, and various weasels.

On the water, the most common nesting ducks are mallards and hooded mergansers. Black ducks, common mergansers, and blue-winged teal are also present. The flowage supports relatively small numbers of breeding ducks because of its sandy character and lack of emergent vegetation. However, in some years, migrating ducks occur in large numbers during spring and fall.

In recent years, the “giant” race of Canada geese has been reintroduced to the flowage. Every year several broods are raised. In spring and fall migrating “interior” Canada geese use the flowage. Fall goose use depends on the water levels and the size of the regional goose population.

Non-Game Species

Overall songbird diversity is high, with approximately 180 species either nesting or migrating through the area. Boreal birds, hawks and owls are well represented. Species that use young aspen and pine forests are most common.

On or near the water, common loons, bald eagles, osprey, great blue herons and spotted sandpiper are common. Common loons use the Willow Flowage for both nesting and staging for migration. Surveys indicate 3 or 4 pair of loons nest on the flowage.

Currently, 9 pair of bald eagles nest in the large white pines near the flowage shoreline. Many immature eagles also use the flowage. Bald eagles are listed as a threatened species by the federal government. In addition, 8 to 10 pair of osprey nest on the flowage and a nesting colony of approximately 50 great blue herons occurs just north of the flowage in a beaver pond. Ospreys are listed as a threatened species by the state of Wisconsin. Spring and fall migration bring other shorebirds such as lesser and greater yellowlegs. The abundance of migrants depends on the water levels of the flowage during the spring and fall.

Ground squirrels, chipmunks, tree squirrels, porcupine, woodland mice, voles, shrews, and bats are found in the forests and wetlands surrounding the flowage. Three wolf family groups or “packs” inhabit the forests to the north, northwest, and south of the flowage. The packs are monitored through radiotelemetry, howl surveys, and track surveys. Currently the gray wolf is classified as endangered under both state and federal law. The Wisconsin wolf population is approximately 200 in 2000. The U.S. Fish and Wildlife Service is proposing to remove Wisconsin wolves from the federal endangered species list.

Ten species of reptiles including snapping turtle, painted turtle, wood turtle, northern water snake, brown snake, northern red-bellied snake, eastern garter snake, smooth green snake, fox snake, and northern ringneck snake are found in the area. Amphibians that could inhabit the Willow Flowage area are salamanders, frogs, and the American toad. The salamanders include blue-spotted, spotted, Tremblay’s, four-toed, and red-back salamander. The frogs include the spring peeper, eastern gray treefrog, chorus frog, bullfrog, green frog, northern leopard frog, mink frog, and wood frog.

Natural Communities

During the summer of 1998, the Department inventoried a total of 48 survey sites. Nine distinct community types were identified: emergent marsh, open bog, muskeg, black spruce swamp, tamarack swamp, northern hardwood swamp, northern wet-mesic forest, northern mesic forest, and northern dry-mesic forest. (Refer to the *Biological Inventory Report* for a listing of the survey sites and those plant and animal species that are characteristic of each community.)

Soils

Soils of the Willow Flowage are a function of glaciation of the area. Generally speaking, the flowage itself separates the types of soil found there. North of the flowage, upland areas are characterized by sand-based soils. Soils common to this area are Crosswell sands, Padus-Pence sandy loams, Keweenaw-Vilas sandy loams and Sayner loamy sand. In general, these soils are nutrient deficient and droughty.

South of the flowage, slightly heavier soils occur on uplands. Sands still are found here, but sandy loams are more prevalent. Soils here include Vilas sands and Pequaming loamy sand, along with an increased representation of Keweenaw-Vilas sandy loams and

Keweenaw sandy loams. Lowland soils of the Willow include Greenwood, Loxley and Dawson peats and Carbondale, Lupton and Markey mucks.

Water Resources

Historic Water Quality

No known records of water quality exist prior to 1973, but water quality data from the 1990s indicates similar conditions to the early 1970s. The initial flooding of timber and other vegetation may have resulted in temporarily higher levels of nutrients, and consequently, more frequent or intense algal blooms, for some unknown length of time.

Land uses, which heavily influence reservoir water quality, haven't changed significantly around the flowage's shoreline. The remainder of the watershed has experienced more land use change since the flowage was created (primarily more hard-surfaced development), which may have resulted in somewhat higher nutrient levels than in the past. However, the Willow Reservoir watershed is still predominantly forested and water quality impacts from hard surface development are probably minor.

Hydrology

The Willow Flowage is an impoundment of the Tomahawk and Willow Rivers, with water levels maintained by a dam on the Tomahawk River, and a large watershed of over 300 square miles. (Refer to Figure 8 page 53 for hydrology measurements.) Flowages and also natural drainage lakes with relatively large watersheds are by nature more fertile, or rich in nutrients and minerals than seepage lakes, which have relatively small watersheds. As a result, Willow Flowage waters are naturally brown-stained and relatively high in phosphorus, the plant nutrient that is most responsible for algae, and to some extent, rooted aquatic plant growth.

The rate of water exchange, or the length of time it takes to replace all the water in the flowage, is also relatively fast because of the large volume of water delivered by incoming streams, relative to the flowage volume. The average annual exchange rate, based on gross storage, varies from about 3 to 6 times per year depending on flowage water levels. Because of this dependency on incoming streams for a supply of water, the effects of droughts are quickly realized in the Willow and other similar reservoirs.

Water levels in the Willow Flowage and 20 other storage reservoirs are managed by the owners of the dam, the Wisconsin Valley Improvement Company (WVIC), to make downstream Wisconsin River flows as uniform as possible. WVIC's 30 year, federal license to operate was re-issued in 1996. As allowed by the new license, water levels in the Willow are managed to reach flow goal objectives while taking into account seasonal weather conditions. This annual operating cycle normally results in excess runoff water being stored in spring, with some of it being released in summer to augment naturally low river flows downstream. Some of the naturally higher autumn incoming flows are stored to replenish what was lost in summer. Water is released throughout the winter to make room for spring runoff.

New to the current license is the requirement that storage (and therefore water level manipulations) must be balanced, or made similar between the Willow and the other large WVIC flowages. WVIC's licensed operating regime can result in Willow Flowage water levels fluctuating up to 18.5 feet, depending on weather conditions and Wisconsin River system flow needs.

FIGURE 8: Willow Flowage hydrology.

	At Maximum Pool	At Minimum Pool	
Surface area (acres)	6392	858	
Maximum depth (ft)	30	11.5	
Water Volume (ft ³ x 1,000,000)	2924	115	
Watershed area (mi ²)			310

Current Water Quality

The current water quality of the Willow Flowage is excellent for a reservoir with a large watershed. The Willow was monitored at several locations in 1993 and 1994 for water quality and a number of other water quality-indicating metrics, as part of the Outstanding Resource Water (ORW) designation process. The analysis of those monitoring data indicated the Willow has excellent water quality, based on measurements and assessments of its water chemistry, sediment chemistry, bottom dwelling aquatic organisms, algae and aquatic plant species and their community structure.

Outstanding Resource Water

The Willow Flowage was classified as an ORW in December 1997 because of its excellent water quality, the high quality of its fishery and wildlife, its diverse aquatic community and the quality of the shoreland/riparian habitat. It is one of only six flowages, all in northern Wisconsin, which has been designated as an ORW.

A number of environmental indicators were used to evaluate flowages for ORW classification. These indicators included the water and sediment quality, the fish community, the benthos (bottom organisms), the phytoplankton, the macrophytes and the riparian zone habitat. The Willow Flowage ranked high for all these environmental indicators. Out of a possible composite score of 30 points, the Willow Flowage had 26 points, which ranked second among the flowages evaluated.

The ORW designation is the highest classification a waterbody can receive. Outstanding Resource Waters are Wisconsin's best waters based on their excellent water quality, a diverse array of aquatic plant and animal life, high quality fisheries and natural shoreline/riparian habitat. They currently do not receive wastewater from point source discharges. Special protection is afforded ORWs from any future wastewater discharges as well. For

example, if a new municipal or industrial wastewater facility wanted to discharge to the Willow Flowage, it would be allowed to only if it met or exceeded the background water quality of the flowage. This is the highest level of protection any waterbody can receive under Wisconsin's water quality standards. Included in the ORW classification are the national and state wild and scenic rivers, the highest quality trout streams in the state, several of the highest quality warmwater streams and about 100 of Wisconsin's best lakes and flowages.

Recreation Resources

The Willow Flowage has traditionally offered visitors an opportunity to recreate in a setting that provides a feeling of remoteness and solitude. The diverse habitats of this 16,174 acre parcel surrounding 6,400 acres of water is home to many species of fish, wildlife and plants. Regardless of their recreational pursuit, most visitors remark about the beautiful scenery surrounding them.

Anglers find excellent fishing for walleye, northern pike and panfish in the bays, open waters and through the ice on the flowage. Boaters and canoeists may enjoy cruising or paddling out to one of the 117 islands or exploring some of the scenic backwater areas. Because this is a flowage and water levels fluctuate seasonally, boaters are advised to travel at slow speeds to avoid submerged rocks and snags. There are currently seven boat landings that provide access to the flowage. Current parking areas are inadequate to support the number of day users and campers coming to the Willow Flowage on peak use and holiday weekends. Cars are forced to park along the road.

All lands are open for hunting during scheduled seasons. Ruffed grouse, snowshoe hare and whitetail deer are the primary game species. Trappers find beaver, muskrat, otter, raccoon, fisher and mink on the property. Visitors who enjoy wildlife watching may observe waterfowl, eagles, osprey, loons and various bird species.

Silent sports enthusiasts can hike, cross country ski or snowshoe along existing logging roads or primitive trails. Snowmobiles and ATVs are allowed on designated trails within the property as was the case under previous ownership by Tenneco Packaging Corporation. Illegal ATV use along the shore during periods of low water continues to be a problem.

Camping has been allowed on the islands although no designated campsites exist. Overcrowding on holiday weekends, shoreline erosion and littering have been problems. In addition to the opportunities on the Willow Flowage property, thousands of surrounding acres of county forest and paper company lands extend the land base for recreation.

Overview of Historical Forest Composition

The Willow Flowage is included in the area known as the "pinery" of the mid- to late 1800s. Vast acreage of uncut large diameter red and white pine predominated this sandy soil area. Lumber companies cut most of the accessible large pine prior to 1900. Only

pine too small to be sawed into boards or of low quality were left scattered across the landscape. Settlers then moved into the area to homestead. They set fire to clear the logged-off land for farming. These fires often escaped control burning vast tracts of once forested land in the 1920s and early 1930s. Most of Oneida County has been burned over as a result of these past practices. Following the advent of fire control in Wisconsin in the 1930s, aspen, a “pioneer” tree species, re-vegetated much of this charred landscape.

Uplands

Red pine and white pine were the predominant timber types associated with the Willow Flowage on upland sites prior to logging in the late 1800s. This was especially true for the sandy soils north of the flowage.

Aspen was a minor component of these old pine forests and often invaded areas disturbed by natural occurrences like wind and fire. Red oak and red maple were also present in the understory of these pine areas and quickly filled canopy gaps created from individual trees or small pockets of trees dying from insect, disease or old age. Periodic fires occurring on about a 20-year cycle kept this hardwood vegetation in check and the pine forest flourishing.

South of the flowage, pine would be found but in lesser amounts. It was common along the south shore of the flowage. But heavy soils further south were dominated by red maple, sugar maple and hemlock.

Low Lands

Lowland areas of peat along moving waters were forested with northern white cedar. Hemlock was sure to be a component of these stands, especially along the upland border. Other peat and muck areas were commonly forested with black spruce, tamarack, black ash, hemlock and small amounts of cedar. Soils too wet to support tree growth grew alder, willow and various bog ground plants like laurel, rosemary, leather leaf and cranberry.

CHAPTER SIX: SUMMARY OF PUBLIC INVOLVEMENT AND TRIBAL CONSULTATION

Citizen Participation Plan

Prior to the beginning of the master planning process, the Department drafted a master planning schedule to identify the stages of the process and approximate dates for key events. The public was given an opportunity to comment on the schedule. The Department Guidance Team approved the tentative timeline, which identified presenting a final master plan to the Natural Resource Board in December of 1999. Copies of the approved schedule were mailed to the entire Willow Flowage mailing list and any others interested in the planning process.

In August 1999, Governor Tommy G. Thompson announced the “Great Addition” land purchase, which added 7,425 acres to the Willow Flowage property. As a result of the new acreage, the master plan schedule was revised. The Department Guidance Team approved a revised timeline, which set the Natural Resource Board presentation in September of 2000.

Tribal Participation

The Willow Flowage is in the ceded territory and subject to off-reservation hunting, fishing and gathering rights. In an effort to involve tribal members and their representatives, regular meetings were held between Willow Flowage Master Plan team members and tribal members and their representatives. Discussions included among other things progress on the planning process and review and recommendations for the management alternatives.

Citizen Participation Tools

In an effort to involve all parties affected by or interested in the future of the Willow Flowage, the Department incorporated a number of public involvement techniques. Throughout the master planning process, the Department relied on direct mailings, workshops, issue forums and news releases to keep people informed and involved.

The public involvement table on page 69 indicates the date, location, attendance and purpose of the meetings. All meeting announcements and information materials were sent to the entire Willow Flowage mailing list, which totals over 850 individuals.

Issue Identification Summary

The public commented on the progress and content of the master plan throughout the process. Comments came in the form of letters, phone calls, electronic mail, direct contact and responses to public questionnaires. The following is a list of recurring issues:

Land Resources

Location of gate on Iron Gate Road
Use of gates and berms to limit access
Degree of access to remote areas
Designating areas for low impact recreation
Potential for future acquisition
Gravel pit use by local units of government
Compatibility of uses with opportunities for solitude
Tribal members operating motorized vehicles beyond the gate to exercise Chippewa Treaty rights

Water Resources

Need for additional boat landings and parking
Motorized use versus non-motorized use
Potential for designating quiet zones
Fluctuating water levels

Recreation

Camping-the number of sites and level of development
Motorized versus non-motorized use areas
Use of ATVs and snowmobiles during hunting and ice fishing seasons
Degradation of property and experience as result of motorized use
Hunter access to the property
Maintaining to the extent possible traditional property uses

Resource Management

Degree of forest production/management
Wildlife management including eagle, osprey, loons and wolves
Forest management as it affects deer and grouse habitat

Summary of Public Meeting CommentsMinocqua Meeting - July 10, 2000

(45 in attendance)

- Maintain ORW status
- Place 2nd gate adjacent to ATV trail
- Pursue a permanent manager position for the Willow Flowage. Put in state budget so operation funds are available.
- Disappointed that most of the woods roads will be closed to motor vehicle use.
- Agree strongly with improvement of boat landing on the west side. (Sportsman's Landing)
- Great job Kermit.

- Put in the plan language that allows a reroute on the extreme south end of the ATV trail to the west to attach the trail to county forest land.
- Add to plan: Require signs at all landings to inform the public of carry-in/carry-out refuse policy.
- No spear fishing prior to open fishing.
- Subtract from plan - Move gate to just west of ATV trail.
- Don't allow any ATV use.
- Gate off last 3 miles of Iron Gate Road to protect the endangered timber wolf from possible poaching.
- From winter (opening) through spring and summer, keep gate closed adjacent to existing ATV trail. Can open the 2nd gate during the fall hunting season. Continue to keep the west gate closed.
- Excellent job. I'm more than happy with the proposal - seems to be a good mix for all parties concerned. Thanks.
- Move 2nd gate to ATV trail. The gate at 'Y' should not have been opened so the moving of the gate should be considered from 'Y' west. Not from 2nd gate location now east.
- Good fishing - could use more landings and make them accessible.
- Support improving landing on west end. (Sportsman's Landing)
- There is a lack of handicap access to most areas in the flowage property.
- More open spots to look over the water.
- There should be off years for the ice fishing to recover. Two off and one on. (Based on actual fishing experience.)
- In regard to the trout streams in the NW section - plan to plant or maintain pine trees (that beaver will not use). The effect will be shade to keep streams cool.
- Manage conifers along cold water streams that enter the Willow on the north side. Better habitat for trout and protects the DNR's stocking efforts.
- At least the group campsites should be reservable. (Helps planning for participants.)
- Keep acquiring land as it becomes available.
- Support (the) acquisition of lands not (originally) purchased on the west side.
- Keep the wolves, protect all endangered species.
- Establish moose and elk into the area.
- Listen to recommendations of DNR biologist
 - a. 1/4 mile buffer around flowage.
 - b. Iron Gate at 'Y'
- The wolves don't need a big expensive play pen to co-exist. They have survived for years on property with "multiple use" inside and outside the Willow's Great Addition.
- Refer to DNR's wolf plan regarding the above statement.
- The "true compromise" as touted in the master plan for the 2nd gate is where it is now.
- Stop closing roads with fire plow, smooth them out for walking and biking.
- Locate gate at the ATV/snowmobile crossing. It is cheaper to enforce. Open for gun deer season and keep closed the rest of the year.
- Do not expand ATV trails.
- Do not allow any more access to ATV trails. Out up a gate closer to Hwy. 'Y' than is proposed.
- Have a Harley Rally on Indian Point.
- For camping - would like to see: 1. Drive-in sites with auto for camping (2 to 3 sites); 2. A couple of sites for handicap drive in with auto.
- No additional ATV trails.

- Increased law enforcement.
- For the ATV/snowmobile trail near Brown Creek, consider option to hook onto county land.
- If a trail system is closed, either within or outside the boundary, an alternate route should be allowed through state lands to hook up with a willing land owner to keep the trail intact. (Verbiage should be included in the plan.)
- Strike the first paragraph on page 5 which states: "The existing motorized recreational in this plan."
- For the aging population and "true multiple use" some of the roads/trails currently closed should be opened to provide more reasonable access to the water/shoreline. Approximately 1/3 of the population is 55 or older.
- As per the "Paragon Poll on Wilderness" released by the Paragon foundation indicates that a majority of Americans do not favor "roadless public lands."
- Page 22. It says the hiking and nature trail would be closed to biking. Maybe the nature trail should be closed, but not the designated hiking trail to biking.
- No drive in campsites. Use Cedar Falls campground.
- Plan looks good to me.
- Keep it wilderness with a few parking areas. No motorized vehicles in the woods. Keep it a quiet area. Maintain some shoreline camping. Prefer no camping on islands - (they) don't take trash home.
- Plan looks good. Full speed ahead on acquiring expanded acreage.
- Prefer original 2nd gate location. Better for grouse hunting. Don't believe ATV area should be expanded.
- Recommend 1/4 mile buffer around flowage. Easier to perpetuate pine stands. Easier to set up silvicultural treatments such as cutting, burning, better visual.
- Believe in good forest management based on science.
- Don't over-regulate.
- What is the minimum acreage for a land use classification (why?). Put it in the plan.
- Areas that are not suitable for forest production should be classified as Native Community. Areas should receive a classification that corresponds with their ecological capabilities.
- Protect wetlands from motorized vehicle damage.
- Leave roads open for a period of time to gather firewood with a permit following timber harvest.
- Too much emphasis on commercial logging. Overall like management for the most part.
- Keep artificial regeneration as a tool for the land manager. (ex. pine plantations) red, white and jack pine on appropriate sites.

Wausau Meeting – July 11, 2000

(17 in attendance)

- Approve the plan as proposed.
- Maintain some motor vehicle access on Iron Gate Road.
- No vehicle access on Iron Gate road.
- Promote non-point source pollution controls in the Willow watershed to provide long term protection of water quality.
- Close Iron Gate to general public use. (Pre-'97 program)
- Add more enforcement effort to enforce ATV restrictions on property.

- Open Iron Gate Road to McCord Road for ATV use.
- Open Iron Gate Road to the west. Maintain ATV trail as proposed.
- Agree with camping program as proposed. Especially keep NO reservations for sites.
- Move to increase staff.
- Keep Iron Gate closed at County 'Y'.
- STOP LOGGING.
- Open Iron Gate Road to McCord Road for ATV use!!!!
- Camping should be on a sign in basis only. The trash is left in many areas. This would control it!
- Like to see the property have more opportunity to reach a climax forest type.
- Close Iron Gate Road at ATV trail.
- More funding for adequate law enforcement - full time.
- Less ATV traffic on the flowage, the better.
- ATV traffic creates tax\$\$ and local business \$\$.
- Open Iron Gate Road to McCord Road.
- Close Iron Gate Road to motorized traffic.
- Forfeit ATV if caught beyond the gate -- wherever it is!

Madison Meeting – July 12, 2000

(11 in attendance)

- Add the creation of a voluntary quiet area and slow no wake regulation on the west end of the Willow. Work with the town.
- Continue efforts to acquire the west end of the Willow.
- Leave a large buffer, no cut area along the shoreline.
- Let aspen convert to whatever comes up to a .5 mile from the shore.
- Do some underplanting in this 1/2 mile area.
- Close gate for motor vehicle access at ATV trail.
- Agree with campsite proposal for island camping.
- Consider designation of more (native) community management areas.
- Purchase remaining lands ASAP.
- Open Iron Gate Road to McCord Road for ATV access.
- Open Iron Gate Road to McCord Road for ATV access and hunting.
- Keep access to 2nd gate, i.e. don't move the gate east.
- No upkeep cost to the state for expansion of ATV trail on Iron Gate Road. ATV club will do the maintenance.
- Taxpayers own this land so we require access to this land for motorized vehicles.
- Overall the plan looks good the way it is.
- Move snowmobile trail out of "Natural Area" when acquired.
- Keep ATV trails limited to what already exists we need quiet areas.
- I like the idea of no wake zones especially in the narrow channels.

Summary of Written Comments

18 letters received through 7-21-2000 (Full text of written comments on file in FL/4)

- Draft plan is excellent, like the low-impact recreation.
- State should find a way to control on-water activities e.g. jet skis, powerful motorboats, water skiing and the Wilderness Queen.
- Close the Iron Gate Road at the ATV trail.
- Protect the 18 native communities identified by the Endangered Resources inventory.
- Close the Iron Gate Road at the ATV trail.
- Convert aspen stands to pine.
- Close the Iron Gate Road at the ATV trail.
- Desire quiet area with no motors allowed on the land or water.
- Move the gate on the Iron Gate Road to just west of the ATV trail.
- Have 1/4 mile buffer around the shoreline rather than the 300 foot buffer.
- Have you considered the possibility of attracting the 'silent sport' community to the Willow Flowage?
- The (Wisconsin) Paper Council has reviewed and endorses the proposed master plan for the Willow Flowage.
- Designate more areas of the property as natural areas.
- Increase block size of mature pine forests.
- Designate wetlands as native community management areas.
- Protect all wetland habitats.
- Protect the lower Tomahawk River corridor all the way to Lake Nokomis.
- Protect the Little Rice/Gobler Lake peatlands.
- The plan should address the severe fluctuation of the water level of the flowage.
- Close the Iron Gate Road at the ATV trail.
- Supports the plan as presented.
- Urges the Department to mitigate the conversion of aspen forest communities to pine by aggressively pursuing options to convert other forest types to aspen outside of the scenic management zone.
- WVIC owns fee title to most of the land below the ordinary high water mark, not just flowage rights.
- References to cooperation with WVIC creates some ambiguity about property rights WVIC retains and where cooperation will occur.
- Identified some typographical errors and requested information to clarify WVIC ownership as shown on the property ownership map.
- The pinery restoration areas should be state natural areas.
- Support the designation of the expanded area of the upper Tomahawk River corridor as a state natural area.
- Support conversion of 1,000 acres of aspen to longer lived tree species.
- The wetland communities should be separated from the forest production area.
- Protect the Tomahawk River corridor below the flowage all the way to Lake Nokomis.
- Protect the Little Rice-Gobler Lake peatland area south of the flowage.
- Support "increasing age class diversity" among aspen stands.
- Block the Iron Gate Road at the ATV trail and perhaps open it for the deer-gun season.

- Received the following written petition with 257 signatures:
Since:
- There are approximately 79,400 acres of designated wild and wilderness areas within less than 100 miles of the Willow Flowage
- 1.5 miles of road for 16, 174 acres does not "provide access for persons of varying abilities to the resources and recreational opportunities of the Willow area"*
- Most of the logging roads and trails already exist

We, the concerned hunters, anglers, campers, ATV riders, snowmobilers, trappers, senior citizens, handicapped persons, and other users of the Willow would like more roads open to motorized access.

*See draft and goals of the Willow master plan.

- Keep iron gate road closed -- No motorized recreational use of the southern portion.
- Allow horseback riding in the Great Addition except for the nature trail.
- The Iron Gate Road never was open to the public and the DNR should not have opened it when they first took ownership in 1997.
- Relocate the second gate on the Iron Gate Road to just west of the ATV trail.
- (3) Allow horseback riding on DNR lands on the Willow Flowage.
- DNR is perpetuating a lie stating that the iron gate on County Y was at times open to the public.
- ATV's illegally use the Iron Gate Road.
- The plan falls short of fully describing the forestry potential of the area.
- Include all 18 of the natural communities included in the Willow Flowage Biological Inventory Report.
- Support the goal to convert 1,000 acres from aspen to red/white pine.
- Should have a management plan for the spruce grouse.
- Covert all aspen within 1/2 mile of the coldwater streams on the northern part of the property to long-lived conifer species.
- Close the Iron Gate Road at County Y, or at the least at the ATV trail crossing. The road could still be opened for deer gun hunting seasons.
- Expand the scenic buffer around the shoreline of the flowage from 300 feet to 1/4 mile.

Summary of Telephone Comments

8 phone calls received through 7-21-2000

- Stated he thought it was a good plan. He wants us to buy the Wildwood Unlimited land.
- Radio station interview promoting upcoming public meetings; talked about public participation in the plan, how people want to keep it as it is and the undeveloped shoreline (except for campsites).
- Believes there is less illegal ATV traffic now than before along shoreline or off-trail. Said they have been trying to control the riders themselves. Wanted to ride the Iron Gate Road to McCord Road. Planned to contact Sen.'s Decker and Breske.
- Concerned about the logging practices as described in the master plan. Believes the logging companies have the DNR in their hip pocket and that the logging companies will now take the profits without having to pay for the land as in the past. Believes the logging companies sold us the land to get out from that cost and can still get all the timber too. Concerned clear-

cutting is wrecking his hunting territory.

- Believes there won't be many changes to the area as a result of the plan; discussed potentially controversy subjects such as ATVs and some forestry practices; also discussed staffing and future boat landings.
- Called to ask whether the Willow Flowage land would be open for Zone-T hunting this fall and if he could camp during that time. Also wondered whether 35 campsites would be enough.
- Concerned about the potential loss of snowmobile trails in the area of the Willow Flowage because of the \$27,000 for liability insurance that the new landowner was seeking; believes there would be lots of people at the meeting Monday upset about the potential loss of snowmobile trails or having to pay "twice" for insurance.
- Believes we did a superb job on the Willow Flowage plan. Would like to see more wilderness with less motorboat activity; asked if the state could supercede local township control regarding boating.

Chronicle of Citizen Participation and Master Planning Events

FIGURE 9: Overview of citizen participation.

Date	Location	Attendance	Purpose
11/15/97	Little Rice Town Hall	200+	DNR staff discuss the state acquisition of the Willow flowage and interim management plans prior to development of the master plan.
5/26/98	Willow Flowage	500+	Public dedication of the Willow Flowage including Governor Tommy G. Thompson, members of the Natural Resources Board and DNR secretary, staff and the general public.
8/15/98	Little Rice Town Hall	300+	Open house for DNR staff to discuss specific program information and record issues and concerns brought out by the public.
11/7/98	Tomahawk High School	120	Develop draft vision and goals. DNR staff conduct an all-day workshop with the public to develop the property's vision goals, which form the skeletal framework for the planning process.
2/6/99	Minocqua Municipal Bldg.	120	Issues forum. DNR experts present inventory and other specific information to communicate the history and resource capabilities of the land and water of the Willow Flowage. Time was allotted after each presentation for a question and answer session.
4/10/99	Minocqua High School	90	Begin developing draft management alternatives.
6/19/99	Tomahawk Middle School	80	DNR staff conduct an all-day workshop to begin developing management alternatives. DNR staff later used this information to refine the three draft alternatives.
9/25/99	Willow Flowage	65	Natural Resources Foundation tour highlighting the developing master plan and natural resources of the Willow Flowage area.
10/12/99	UW Campus Wausau	30	DNR staff present the three draft management alternatives and ask those in attendance for their input for the master plan.
10/16/99	Tomahawk High School	39	Discuss and revise the three draft management alternatives.
11/4/99	MATC Madison	30	DNR staff present the three draft management alternatives and ask those in attendance for their input for the master plan.
7/10/00	Minocqua Municipal Bld	45	Open house session to solicit public comments on the draft master plan and environmental assessment.
7/11/00	Wausau	17	Open house session to solicit public comments on the draft master plan and environmental assessment.
7/12/00	Madison	11	Open house session to solicit public comments on the draft master plan and environmental assessment.

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APPENDIX A

Cultural Resources

Prehistoric Chronology

In the 1960s, Robert J. Salzer (1974) directed Beloit College's archaeological investigations of lake shores and river banks in north central Wisconsin. The North Lakes Project included limited work in the Willow Flowage, but mainly focused on northern Oneida County and southern Vilas County. The results of excavations at twelve sites enabled Salzer to formulate a chronology of the phases for the Highland Lake District:

Flambeau Phase - The sequence begins with the Flambeau phase, around 7,000 B.C. It is assigned to the Late Paleo-Indian stage, and is distinguished by the production of unfluted lanceolate spear points known as Agate Basin. Hixton silicified sandstone from western Wisconsin was the preferred lithic material, but a variety of locally available materials were also used.

Minocqua Phase - The Minocqua phase follows, and is estimated to date to around 6,000 - 5,000 B.C. It is also Late Paleo-Indian, but is marked by the use of eared Scottsbluff points, generally made of exotic (non-local) chert, basalt, or Hixton silicified sandstone.

Squirrel River Phase - The estimated dates for the Squirrel River phase are the same as the Minocqua phase, but Squirrel River is assigned to the Archaic stage. It has only been identified at the Squirrel Dam site (47-On-21). Points are small, and side-notched or corner-notched. Tools were generally made of Hixton silicified sandstone or exotic chert.

Burnt-Rollways Phase - The Burnt-Rollways phase follows a long temporal gap in the archaeological record for this region. It is classified as Late Archaic, and is estimated to date to around 1710 B.C. -A.D. 1. Most projectile points are small and corner-notched, but expanding stemmed and side-notched points also occur. A variety of copper tools appear during this phase.

Nokomis Phase - The first ceramics in the region appear during the Nokomis phase, around A.D. 1-200. Sites belonging to this Middle Woodland phase are more numerous than earlier phases. In addition to local pottery known as Lake Nokomis Trilled, one finds trade vessels from surrounding regions. Points include contracting stemmed, straight stemmed, expanding stemmed, and side-notched forms. Most are made of exotic lithic materials, sometimes from as far away as southern Illinois or North Dakota, reflecting trade relations within the Hopewell Interaction Sphere. Sites often contain copper tools and copper waste from tool manufacture.

Lakes Phase - The Lakes phase is Late Woodland. Radiocarbon dates range from A.D. 855 to 1210. Local ceramics share similarities to Madison ware from southern Wisconsin and Heins Creek ware from northeastern Wisconsin. Collared vessels appear later in the sequence. Middle Mississippian and Oneota trade vessels also occur. Small triangular arrow points are common. Most stone tools are made of local quartz. Copper tools and debris are still present, but less abundant than before. Some burials were placed in mounds. Site size ranges from less than one acre to as much as 40 acres.

Archaeological sites on the property:

<u>Site Number</u>	<u>Name</u>	<u>Type</u>
47-On-60	unnamed	prehistoric campsite/village
47-On-66	Kate Pier	historic cemetery
47-On-96	Beaver Creek Outlier	prehistoric lithic scatter
47-On-97	D-Willow P-43	prehistoric lithic scatter
47-On-98	U-Willow P-39	prehistoric lithic scatter
47-On-99	U-Willow P-48	prehistoric lithic scatter
47-On-100	U-Willow P-50	prehistoric lithic scatter
47-On-101	U-Willow P-51	prehistoric lithic scatter
47-On-102	Indian Point North	prehistoric lithic scatter
47-On-110	Old Bridge East	prehistoric lithic scatter
47-On-111	Willow P-23	prehistoric lithic scatter
47-On-112	Sand Hook	prehistoric lithic scatter
47-On-113	Willow P-26	prehistoric lithic scatter
47-On-114	Comet Tail	prehistoric lithic scatter
47-On-115	Flat Islands	prehistoric lithic scatter, historic debris
47-On-116	Indian Point WPH-2	prehistoric lithic scatter, historic debris
47-On-117	Indian Point WPH-4	Archaic lithics, Woodland lithics/ceramics, hist. debris
47-On-118	Old Bridge SE	prehistoric lithic scatter, historic debris
47-On-123	Grass Point	prehistoric lithic scatter, historic debris
47-On-124	Sand Boot	prehistoric lithic scatter
47-On-125	Exclamation	prehistoric lithic scatter, historic debris
47-On-126	Forrest's	prehistoric lithic scatter
47-On-204	Willow P-25	prehistoric lithic scatter
47-On-207	Axel	prehistoric isolated biface, historic debris
47-On-208	Oxshoe	historic debris
47-On-210	Bare Island	prehistoric lithic scatter
47-On-211	Maps End	prehistoric isolated flake, historic sherd
47-On-212	Cobble Island	prehistoric lithic scatter
47-On-213	Quartz Vein	prehistoric quartzite quarry
47-On-214	Face	prehistoric lithic scatter
47-On-215	Ice Wind	prehistoric lithic scatter
47-On-216	Willow P-52	prehistoric lithic scatter
47-On-217	Beacon	prehistoric lithic scatter
47-On-218	Pink Glass	prehistoric lithic scatter, historic debris

47-On-219	Caps Creek	prehistoric lithic scatter, historic debris
47-On-240	Big Marsh	prehistoric lithic scatter
47-On-241	Rocky Bar	prehistoric lithic scatter
47-On-252	unnamed	historic logging camp

APPENDIX B

Wisconsin Valley Improvement Company and the Willow Flowage Master Plan¹⁷

The Willow Flowage came into existence in 1926 when Wisconsin River Valley corporations were looking to the future. Their actions during the intervening years to protect the undeveloped nature of the Willow shoreline made it possible to have a Willow Flowage Master Plan today. Through the Master Plan, the corporations and the public should realize a mutually beneficial relationship through which to enjoy the Willow on into the future.

Wisconsin Valley Improvement Company (WVIC), Wausau, which constructed and owns the Willow Flowage, is unique among United States water conservation-regulation organizations. The company plays a significant role in the Master Plan by virtue of its authority under Federal Law, and its Willow Reservoir responsibilities related to its federal license and remaining land ownership responsibilities.

The WVIC Organization

WVIC is a private company that coordinates the Wisconsin River flow regulation system for several separate waterpower companies. It is owned by paper mill companies and electric utilities, which pay WVIC for the streamflow regulation benefit it provides on the Wisconsin River. WVIC's storage and release operation increases the amount of electricity the member companies' 25 hydroelectric dams on the Tomahawk and Wisconsin rivers would otherwise generate without the reservoir system. WVIC does not generate electricity at its dams. Reservoir operation conserves water, reduces flood flows by up to 50%, can double naturally occurring low flow, and enhances water quality in the Tomahawk and Wisconsin rivers.

The Wisconsin River reservoir system provides 66,000 acres of water-based recreation opportunities for the public. Additionally, the river's 430 miles of free-flowing and impounded stretches comprise a vast scenic and recreation resource freely open to the public.

Willow Ownership

The Willow Flowage waterbody is a 6,392-acre storage reservoir owned by WVIC. WVIC owns or holds flowage rights to the land at and below the Willow Flowage's ordinary high water mark at elevation 1,529.35 NVGD (National Vertical Geodetic Datum). WVIC does not own the islands in the flowage.

¹⁷ Information provided by Robert Gall, President, Wisconsin Valley Improvement Company.

The State of Wisconsin owns 16,134 acres of land above the highwater mark surrounding the flowage and many of the islands within it. WVIC holds restrictive covenants on this land. About 20% of the shoreline presently remains in private ownership.

WVIC Purpose and Legal Authority

The Wisconsin Legislature in 1907 granted WVIC a charter to organize and develop the Wisconsin River headwaters lakes and their tributary streams. The company's purpose as stated in the charter is "...to produce as nearly a uniform flow of water as practicable in the Wisconsin and Tomahawk rivers by storing in reservoirs surplus water for discharge when water supply is low to improve the usefulness of the rivers for all public purposes and to reduce flood damage." The company began with 16 natural lakes. Between 1922 and 1937, five more reservoirs including the Willow were constructed.

Because the Wisconsin River is a navigable waterway and reservoir operation contributes to interstate commerce, WVIC was required by the Federal Power Act to obtain a federal license for its operation. Under federal supremacy doctrine, WVIC's Federal Energy Regulatory Commission (FERC) license takes precedence over the Wisconsin Legislative Charter. The license was renewed in 1996 for 30 years.

Under the operation plan the FERC license requires WVIC to follow, the system of 21 headwaters reservoirs work together as a whole to assure balance among the Wisconsin River resource's benefits. Willow does not stand alone. It is one of WVIC's five largest reservoirs which are operated daily to achieve flow goals at Merrill and Wisconsin Rapids. Flow goals consider the time of year and the amount of water in storage. The five reservoirs are operated to achieve balance in the amount of water in storage among them.

The Department of Natural Resources (DNR) in this Master Plan accedes to FERC authority over WVIC's operation of the Willow Flowage waterbody. The Master Plan, therefore, is applicable to management of the land the State of Wisconsin owns and not to the operation of the Willow waterbody.

History of Willow Flowage Protection

It has been the policy of WVIC and its member companies over the years since the Willow Flowage was constructed to protect the natural setting that occurs there. From 1926 to 1958, WVIC owned the shoreline and acreage inland from the high water mark. When WVIC sold the land beyond the water for industrial forest purposes, it placed restrictive covenants in the deeds. The covenants remain in force today and prohibit the construction of buildings or other structures along the shoreline, and in many cases prohibit any use other than timber production and harvesting. The State of Wisconsin and private ownership of parcels surrounding the shoreline are bound by these covenants.

DNR and WVIC Cooperative Management

DNR and WVIC have unique roles and responsibilities relative to the Willow Flowage. Through the Willow Flowage Master Plan, the DNR will implement a multifaceted land-based resource stewardship program on behalf of the public. Under authority of FERC license, WVIC will continue implementation of required water-based operation,

environmental and recreation plans.

As the Willow Flowage Master Plan is implemented, evaluated and updated, DNR will consult with WVIC to maintain clear understanding of each others' management roles, prevent violation of deed covenant restrictions, and whenever and wherever possible, seek cooperation which will sustain a healthy resource long into the future.

APPENDIX C

Definitions from Chapter NR 44 – Master Planning for Department Properties

NR 44.03 Definitions

- 1) **Biological diversity.** The variety and abundance of species, their genetic composition, and the communities, ecosystems, and landscapes in which they occur. It also refers to the variety of ecological structures, functions and processes at any of these levels.
- 2) **Board.** The Natural Resources Board.
- 3) **Cultural resources.** Any archeological, architectural or historical artifact, site or structure that reflects on the human-made environment.
- 4) **Community.** An assemblage of species living together in a particular area, time and habitat.
- 5) **Department or DNR.** The Wisconsin Department of Natural Resources.
- 6) **Ecological capability.** The potential of an area to support or develop one or more communities, with the potential being dependent on the area's abiotic attributes, its flora and fauna, its ecological processes and disturbances within and upon the area.
- 7) **Facility development.** The construction of infrastructure, including buildings, roads and trails for resource management, public use or other purposes.
- 8) **Master plan or plan.** A Department plan which describes the authorized land management, resource protection, facility development and management of recreational use on a department property, but does not include a study prepared for the purpose of considering the feasibility of land acquisition respecting a new or existing project.
- 9) **Native.** Indigenous to the area or region.
- 10) **Passive management.** Management where objectives are achieved without direct action.
- 11) **Property or properties.** Areas of land approved by the governor for acquisition under x. 23.14, Stats., or otherwise established by the board.
- 12) **Sustainable forestry.** The practice of managing dynamic forest ecosystems to provide ecological, economic, social and cultural benefits for present and future generations.
- 13) **Trail.** A way or path designated on department maps or by signs or both as open for public travel by foot, horseback, bicycle, snowmobile, ATV or highway/off-highway vehicles.

NR 44.07 RECREATIONAL USE SETTING SUBCLASSIFICATIONS. (1)

GENERAL. The recreational use subclassifications define the compatible management and use activities and the appropriate recreational facilities for 4 general recreational settings. Each subclassification describes a distinct recreational environment, each offering opportunities for different types of recreational experiences.

The subclassifications described in this section shall be used in a master plan to describe the general recreational management objective for areas with the recreation, scenic resources and the wild resources management classifications described under s. NR 44.06.

Note: The subclassifications describe a range of recreational use settings, each being characterized by the manner it addresses a number of key attributes, such as degree of remoteness, motor use and the apparent level of management and development. The settings span a range from wild and undeveloped to intensively used and highly developed.

(2) DEFINITIONS. (a) "All terrain vehicle" or "ATV" has the meaning specified in s. 340.01(2g), Stats.

(b) "Box latrine" means a simple open-air privy commonly provided at isolated primitive campsites.

(c) "Group campsite" means any campsite authorized for use by groups other than those meeting the definition of a camping party in a family campground as defined by ch. NR 45.

(d) "Highway/off-highway vehicles" or "H/OHV" means motor vehicles that are generally 4-wheel drive, high clearance, street legal, licensed vehicles with floatation-type tires able to traverse roads and trails where ordinary passenger vehicles cannot travel without hazard of becoming stuck or otherwise disabled.

(e) "Information facilities" include signs, sign boards, information kiosks and visitor centers for the purpose of providing use or educational formation to the public.

(f) "Motorized use" means people traveling by use of a motor powered vehicle other than when engaged in management activities or contract operations authorized by the department.

(g) "Native surface material" means unprocessed, indigenous road and trail surfacing material.

(h) "Natural-appearing" means visually perceived as minimally altered or modified by human actions.

(i) "Non-motorized use" means transportation of people by any means other than by a motor-powered vehicle, and the use of motorized vehicles for management purposes by the department and its contractors when engaged in management activity.

(j) "Permanent all-season road" means a road developed and operated for continuous or recurrent annual use. It is designed and constructed to accommodate year-round use, but may have use restrictions or may not be maintained at various times of the year.

(k) "Permanent seasonal road" means a road that is maintained as part of the permanent road system but is developed for periodic use when the ground is frozen or dry

and firm.

(l) "Primitive surface material" means the natural soil, rock or sand surface existing on roads and trails that developed through use and was not constructed.

(m) "Single unit campsite" means a campsite designated for use by families or groups of 6 persons or less.

(n) "Snowmobile" has the meaning specified in s. 340.01(58a), Stats.

(o) "Temporary road" means a road designed and constructed for short-term use during a specific project.

(p) "Visitor controls" means regulatory signs, access barriers and regulations, for directing or controlling the behavior of people using department-managed lands.

(q) "Visual quality management" means actions to produce or maintain a specific state of landscape aesthetic conditions and minimize or mitigate any negative visual impacts from land management activities or development.

(3) ROAD AND TRAIL STANDARDS. For purposes of this section, roads and trails are classified as follows:

(a) Primitive road. A primitive road shall be a temporary or permanent seasonal road with a maximum sustained cleared width normally not exceeding 12 feet, little or no roadbed grading, minimal cut and fill, a surface of primitive or native material.

Note: Due to their unimproved, rough condition, primitive roads commonly are only suitable for H/OHV's and other off-highway vehicles, and may not be negotiable by ordinary highway vehicles.

(b) Lightly developed road. A lightly developed road shall be a temporary road, a permanent seasonal road or a permanent all-season road which is primarily a single lane with a maximum sustained cleared width normally not exceeding 16 feet, is lightly to well-graded with minimal cut and fill, is surfaced with primitive, native or aggregate materials except in limited special use situations where asphalt may be used, and has a maximum speed design of 15 mph.

Note: Due to the variability of roadbed conditions at different times and places, some lightly developed roads might not be negotiable by ordinary highway vehicles.

(c) Moderately developed road. A moderately developed road shall be a permanent seasonal road or a permanent all-season road which typically is 2-lane, but may be one-lane, have a maximum sustained cleared width normally not exceeding 45 feet for 2-lane and 30 feet for one-lane, a well-graded roadbed and may have moderate cuts and fills and shallow ditching, has a surface of aggregate, asphalt or native material, and a maximum design speed of 25 mph.

(d) Fully developed road. A fully developed road shall be a permanent all-season road with a cleared width normally of 50 feet or more, a roadbed with cuts and fills as needed, an aggregate, asphalt or other paved surface and be designed for speeds exceeding 25 mph.

(e) Primitive trail. A primitive trail shall be a minimally developed single-file trail with a maximum sustained cleared width normally not exceeding 8 feet and a minimal tread width for the intended use, have a rough, ungraded bed where large rocks, stumps and downed logs may be present. It primarily follows the natural topography, has no or few shallow cuts and fills, and is surfaced with primitive or native materials, except for limited distances where environmental conditions require the use of other materials. Modifications to the natural trail surface are limited to that which is minimally necessary to provide essential environmental protection.

(f) Lightly developed trail. A lightly developed trail shall be a trail with a maximum sustained cleared width normally not exceeding 16 feet, a moderately wide tread width for the designated uses, a rough-graded base to remove stumps and large rocks, and a surface of primitive or native materials, except where other materials are required due to environmental conditions or where the trail also serves as a lightly developed road where other types of surfacing materials are used.

(g) Moderately developed trail. A moderately developed trail shall be a trail with a maximum sustained cleared width normally not exceeding 8 feet, a minimal tread width for the intended use, a relatively smooth graded base with a compacted surface composed of stable materials such as aggregate. Where practicable and feasible, a moderately developed trail shall, at a minimum, meet the standards for recreational trails accessible to persons with a disability.

(h) Fully developed trail. A fully developed trail shall be a trail with a smoothly graded base and a stable, hard surface composed of materials such as asphalt, aggregate or frozen earth. The trail's cleared width, tread width and cuts and fills are not limited, but shall be appropriate for the trail's intended use. To the degree practicable and feasible, fully developed pedestrian trails shall be fully accessible by persons with physical disabilities.

(4) **TYPE 1 RECREATIONAL USE SETTING**. In the master plan a Type 1 recreational use area shall be consistent with the following:

(a) Management objective. The objective of this setting is to provide a remote, wild area where the recreational user has opportunities to experience solitude, challenge, independence and self-reliance.

(b) Perceived remoteness. An area designated as a Type 1 setting shall be substantially isolated from development and be managed to maintain or enhance a perception of remoteness from human activity. Occasional sights and sounds of motors and other human activity may be present but are typically distant, except during hunting seasons. The designated area shall be of a size and configuration so as to offer a substantial opportunity for the public to experience solitude, substantially free of conflicting influences

from adjacent land uses, with a majority of the area meeting one or more of the following minimum criteria:

1. An area that is approximately 2,000 acres or more in size and 1/2 mile or more from a federal, state or county highway or frequently used rail line, and at least 1/4 mile from any other public highway, department road open to motor vehicle use by the public, motorized trail or infrequently used rail line.

2. A river or stream, or river or stream segment that is approximately 6 miles or more in length with little or no evident development and no road crossings. It is generally not less than 1/4 mile from the river or stream to the nearest motorized trail or road open to public vehicles, except when unique physical characteristics or use patterns allow the river or stream to be closer or demand it be further from a route used by motor vehicles to meet the objectives of the classification.

Note: Topography and vegetation conditions may largely determine the minimum size necessary to achieve the objectives of this setting. Unique local conditions, such as rugged topography, may allow some areas that are closer to open roads and motorized trails to be appropriately designated as Type 1 settings. Conversely, larger separation distances would be required in relatively flat, open areas or areas near highways with heavy traffic.

(c) Social contact. Typically, the level of recreational use in the area is low, resulting in little contact with others outside one's own group when traveling and, when camping, other camper groups are not seen and generally may not be heard.

(d) Access. Internal access is highly limited and travel may be difficult, as the area is essentially without roads and trails and access by watercraft is hard due to long distances from access points or to obstructions to navigation. The following criteria shall apply:

1. Public vehicle access and motorized recreational use is prohibited and the use of motorized watercraft in the area shall be restricted to the maximum degree possible, except for:

- a. Within authorized access roads and parking lots;
- b. The incidental use of motorized watercraft if, and only to the extent that, such use may not be prohibited due to the public's right of navigation; and
- c. A person with a disability may use a manually or electrically powered wheelchair or an electrically powered watercraft operated at slow-no-wake speed as a mode of personal conveyance; or may be authorized, by a permit issued by the property manager, to use a low-powered mechanically propelled vehicle designed specifically for use by a person with a disability.

2. The development and maintenance of limited, primitive hiking and portage trails may be authorized by the master plan, and trails may not exceed a density of one mile per square mile. Trail maintenance shall be for essential resource protection only. Areas with non-conforming roads and trails may be classified as a Type 1 setting if the master

plan provides measures to assure their closure and restoration to a natural appearing condition or their redevelopment to conform to the setting standards. A limited number of small off-road public parking areas located on the periphery may be authorized by the master plan.

3. The use of motorized vehicles for routine maintenance of trails and campsites is not authorized.

Note: Authorized motor vehicle access for restoration or other land management activities is described under s. NR 44.06(10)(c)7.

(e) Recreational facility development. Facility developments or modifications to vegetation or the physical landscape are not authorized, except for those that are minimally necessary to accommodate limited primitive camping and authorized trails. The following development standards shall apply:

1. Trails, when authorized by the master plan, shall be minimally developed and maintained primitive trails that are restricted to hiking or portage uses, and shall be consistent with par. (d).

2. Developed campsites, when authorized by the master plan, shall be small, minimally developed single unit campsites that are primitive, remote and widely dispersed, are minimally cleared and have a primitive surface. Campsite facilities are limited to a fire ring and box latrine. A box latrine may be constructed of wood or synthetic materials and shall be a non-reflective, earth-tone color that blends with the surrounding environment. Campsites shall be sited and developed to be visually inconspicuous from the water. Trees and other vegetation may be cut as is minimally necessary for campsite development and camper safety.

3. Environmental protection measures shall be used only to protect fragile resources under normal use patterns. Environmental protection and impact mitigation measures shall be designed to be in harmony with the character of the area and the setting, and only native, natural materials may be used.

(f) User management. On-site visitor controls and information facilities or signs shall be limited. Only rocks or vegetation may be used to close roads and trails, although earthen berms may be temporarily used while restoration of the road is in progress. Small signs may be used to mark watercraft campsites. Trails may be minimally marked at trailheads and may not have trail markers along the route. Trailhead information signs, when provided, shall be the minimum size necessary and be primarily of earth-tone colors.

Note: Information for users of this setting is normally provided by brochures and other means off-site.

(g) Land management and non-recreational facility development. Authorized land management and non-recreational facility development shall be as described under s. NR 44.06(10)(c), the wild resources management area classification.

(5) **TYPE 2 RECREATIONAL USE SETTING.** In the master plan a Type 2 recreational use area shall be consistent with the following:

(a) **Management objective.** The objective of this setting is to provide a remote or somewhat remote area with little development and a predominantly natural-appearing environment offering opportunities for solitude and primitive, non-motorized recreation.

Note: Under appropriate circumstances, equestrian and bicycle uses are compatible with this setting.

(b) **Perceived remoteness.** An area designated as a Type 2 setting shall be managed to maintain or create a moderate to high perception of remoteness. The objective is to provide conditions where users of the area may feel they are in a secluded setting. The designated area shall be of a size and configuration, when considered in the context of topography, vegetation and adjacent or nearly adjacent land uses, to offer opportunities for solitude.

Note: The area may be smaller in size and nearer to public highways than that required for a Type 1 setting. Typically, in a Type 2 setting the sights and sounds of human activity may not be entirely uncommon, but usually are distant.

(c) **Social contact.** Use levels and contacts with people outside one's own group on trails and waterways typically are low to moderate. Designated campsites shall be located so that campers have low sight and sound contacts with other campers. Only recreational uses or styles of use that are similar in character shall be authorized.

(d) **Access.** Internal access shall be limited and travel may be difficult in some areas. The probability of significant use of motorized watercraft in the area is low. The following shall apply:

1. Access ways are restricted to primitive trails, primitive roads and a minor amount of lightly developed trails and roads. Roads shall be developed to the minimum standard required for the intended use, and trail and road densities are restricted to a total of 2 miles per square mile or less, including abandoned roads and trails that have not been restored. Areas with non-conforming roads and trails may be classified as a Type 2 setting if the master plan provides measures to assure their closure and restoration to a natural appearing condition or their redevelopment to conform to the setting standards. A limited number of short, vehicle access roads and small parking areas located on the periphery of the area are authorized, including roads and water access sites allowed for wild lakes designated under s. NR 44.06(10)(f)3.

2. Public motor vehicle access or motorized recreational use is prohibited and the use of motorized watercraft on waterbodies in the area shall be restricted to the maximum degree possible, except for:

a. The incidental use of motorized watercraft if, and only to the extent that, such use may not be prohibited due to the public's right of navigation;

b. Limited snowmobile trail crossings which may be authorized in the master plan when other viable alternative routes are unavailable and the snowmobile use does not substantially conflict with the predominant non-motorized recreational uses;

c. A person with a disability may use a manually or electrically powered wheelchair or an electrically powered watercraft operated at slow-no-wake speed as a mode of personal conveyance; or may be authorized, by a permit issued by the property manager, to use a low-powered mechanically propelled vehicle designed specifically for use by a person with a disability.

3. As is reasonably required, the use of motorized vehicles and equipment or tools may be authorized in the area for logging, restoration, and other management or maintenance activities by the department or its contractors engaged in management activities. Access developed for management purposes may not exceed the road and trail standards for the setting. In performing management activities, all reasonable efforts shall be made to avoid conflicts with recreational use.

(e) Recreational facility development. Recreational facility development shall be minimal, with facilities being rudimentary and primarily for environmental protection purposes rather than user comfort and convenience. Facility development in the area shall be maintained at a low density level. Management and development shall comply with the following:

Note: Trails, small parking areas, and small, minimally developed water access sites are the most common types of development in a Type 2 setting.

1. `Visibility of development activities.' Development activities, shall, to the degree possible and practicable, be designed to harmonize with the topography and other landscape features; and, to the degree feasible and practicable, visual quality management shall be prescribed to minimize negative visual impacts from development and maintenance activities.

2. `Buildings and other structures.' The construction of buildings is prohibited, except that small, rustic appearing, vault toilets may be constructed at access sites and portable toilets may be placed at sites where permanent toilet facilities are not practicable or feasible. Box latrines at campsites may be made of wood or synthetic materials. For other types of structures, undimensioned, natural building materials shall be used whenever possible and structures shall be designed and constructed to blend with the surrounding environment. All structures shall have non-reflective surfaces and be of earth-tone colors.

3. `Camping facilities.' Developed campsites, where authorized by the master plan, shall be only small, single unit primitive campsites that are widely dispersed and remote. They shall have minimal clearing and a primitive surface material. Improvements are limited to a fire ring, picnic table and box latrine, except for designated disabled accessible sites which may have an improved surface, improved water access and other appropriate facilities. The facilities for persons with disabilities shall be designed and constructed to harmonize with the environment and setting to the degree feasible and practicable. Picnic areas and campgrounds are prohibited. Above-ground utility structures

or cleared utility corridors may not be constructed to service recreational facilities, and any that exist shall be removed whenever possible.

4. `Trails.' Designated recreational trails are primarily primitive trails, but lightly developed trails and limited moderately developed trails may also be present, and shall be consistent with par. (d). For each designated trail the master plan shall identify the specific type of use authorized and any appropriate use restrictions, such as seasonal or environmental condition restrictions. Limited mowing of trails and machine grooming for cross-country skiing is authorized, except in a wild resources management area.

5. `Environmental protection.' Limited environmental protection measures may be evident. Measures to prevent or correct unacceptable environmental impacts shall be in harmony with the character of the area and the setting. Only native, natural materials may be used.

(f) User management. The department shall minimize the use of on-site visitor controls which shall harmonize with the environment whenever possible. Information facilities, when provided, shall be simple and unobtrusive. When information sign boards are provided they shall be located only at trailheads and be of the minimum size necessary and primarily of earth-tone colors. Trail markers, if provided, are limited to widely spaced, small route markers, and to required safety signs. Directional signs, except for those at trailheads and trail crossings, are prohibited.

(g) Land management and non-recreational facilities. Resource modification or use compatible with the objectives of the recreational use setting may occur but shall be done in ways that harmonize with the landscape and, overall, are visually inconspicuous, except for short-term, local occurrences. Management parameters for the area include the following:

1. `Visibility of management activities.' To the degree possible and practicable, management and restoration activities, including forest management, shall be designed to harmonize with the surrounding topography and other natural occurring shapes in the area; and, with consideration of the area's management objectives and resource capabilities, visual quality management techniques shall be prescribed to the degree feasible and practicable to minimize and rapidly reduce secondary, negative visual quality impacts of management activities.

2. `Resource management structures or developments.' Pre-existing dams, dikes or ditches may be authorized, but shall be inconspicuous and blend in with the surrounding landscape. The construction of new dams, dikes or ditches may be authorized by the master plan only under extraordinary circumstances that are consistent with the master plan's objective for the area, and shall be designed and constructed to be inconspicuous and blend in with the surrounding landscape. Pre-existing and new fish habitat improvement devices may be authorized, provided they are inconspicuous and blend in with the surrounding landscape.

3. `Non-recreational and non-resource management structures.' a. The area shall have no or few non-recreational structures;

b. New above-ground utility structures or cleared utility corridors should not be constructed or encouraged, and any that are pre-existing should be removed whenever possible;

c. Unauthorized pre-existing non-recreational structures, unauthorized recreational structures and other unauthorized structures, including cabins and residential or commercial structures, shall be removed as soon as practicable and feasible.

4. `Forest management.' Forest management shall be consistent with this subsection and with the management objectives established for the area by the master plan. Any management activity or technique authorized for the area shall be specified in the master plan, including the extent, timing and frequency of any activity or technique. The following, also, shall apply:

Note: The level of detail regarding the extent, timing and frequency will be as specific or general as appropriate.

a. Unless otherwise addressed in the master plan, slash, which is the residual tree tops and limbs left after a harvest activity, shall be removed, chipped or lopped and scattered to within 24 inches above the ground within 100 feet of a designated recreational trail or public road. Where the effective visibility from the road or trail exceeds 100 feet, slash shall be treated within that zone, up to 200 feet from a trail or road.

b. Any timber salvage following a natural disturbance shall be done in a manner compatible with the area's classification and the master plan's management objectives for the area.

5. `Forest opening creation and maintenance.' Natural or artificially created forest openings maintained through mowing or cutting of brush and small trees or the use of herbicides may be present, and shall be specified in the master plan, including the extent, timing and frequency of any activity or technique.

6. `Agricultural activities.' Agricultural activities are not authorized.

7. `Prescribed burning.' Prescribed burning is authorized if constructed firebreaks are restored to a natural-appearing condition after the burn is completed.

(6) TYPE 3 RECREATIONAL USE SETTING. In the master plan a Type 3 recreational use area shall be consistent with the following:

(a) Management objective. The objective of this setting is to provide readily accessible areas with modest recreational facilities offering opportunities at different times and places for a variety of dispersed recreational uses and experiences. Landscapes within the setting may vary from natural-appearing to highly altered.

(b) Perceived remoteness. Remoteness is not a high priority and a wide range of conditions may occur.

(c) Social contact. Users may have regular contact with others outside their own group. Varied and somewhat diverse types of use may be common in some areas.

(d) Access. Internal access throughout the area typically is readily available. In addition to an internal network of management roads and recreational trails, town, county, state or federal highways may cross the area. The following criteria shall apply:

1. Public access and recreational use by motorized means is authorized on roads and trails as provided by the master plan, except within designated non-motorized recreational use areas described under par. (h). Some roads within the area may be open only to vehicles for administrative and management purposes.

2. Internal roads in the area shall be primarily primitive, lightly or moderately developed roads, and a minor amount of fully developed roads may be present. Trails may be moderately developed, lightly developed or primitive; however, typically lightly and moderately developed trails are predominant. Road and trail densities are not limited; however, the master plan may limit road and trail development to achieve specific management or recreational use objectives.

(e) Recreational facilities. Recreational facility development, when present, shall be simple, and may provide a modest level of user conveniences and comfort as well as furnish environmental protection. The following shall apply:

Note: Examples of developments or structures typical of this setting include access roads and parking areas, boat ramps, vault toilets, dispersed campsites and small picnic areas, small shelter buildings, bridges, boardwalks and stairs.

1. `Buildings, structures and landscape modifications.` Structures shall have simple designs and natural or natural-appearing materials shall be emphasized in construction. Buildings and other structures, including facilities for persons with disabilities and landscape modifications, shall be designed to blend into or complement the natural landscape to the degree possible and practicable. Portable toilets with earth-tone colors that blend with the surrounding environment may be used where permanent facilities are not practicable or feasible.

2. `Camping facilities.` Where camping is authorized by the master plan, campsites shall be primitive or semi-primitive single unit or group sites and may be auto, watercraft, walk-in, backpack, horse or bike accessible. The master plan shall designate the mode or modes of authorized access. The campsites may be located either singly or in clustered units of 2 to 10 sites with 400 feet or more of separation between them. Campsites may be located less than 400 feet apart when the topography assures that the setting's privacy and solitude objectives can be achieved. Each campsite shall generally be 150 feet or more away from any road, not including road spurs leading to individual campsites. Generator use is not authorized, except that, with a permit issued by the property manager, a person with a disability may be authorized to use a generator to recharge batteries for accessibility devices. Campsite improvements may include a leveled and firm surface, a fire ring, picnic table, box latrine, vault toilet or portable toilet, and a hand pump well where drinking water is provided. Electric lights and special provisions

for recreational vehicle use may not be provided at these sites.

3. 'Picnic areas.' Picnic areas may not be designed for more than 20 persons and may not exceed 2 acres. The facilities are limited to the following: 1 to 5 parking spaces, if auto accessible; 1 to 5 picnic tables and grills; small toilet buildings or portable toilets; a shelter building and a hand pump well where drinking water is provided. More than 5 parking spaces may be provided where trails or other compatible recreation facilities, in addition to the picnic area, are present.

4. 'Trails.' Designated recreational trails are limited to lightly developed, moderately developed and primitive trails, and shall be consistent with par. (d). For each designated trail, the master plan shall specify the type of trail and the specific types of use authorized and any appropriate use restrictions, such as seasonal or environmental condition restrictions.

5. 'Environmental protection.' Low to moderate levels of environmental protection or mitigation measures may be present and shall be in harmony with the character and use of the area.

(f) User management. Simple information facilities and obvious visitor controls that harmonize with the environment are authorized. Regulatory signs, interpretive signs, directional signs, public safety signs and entrance signs shall be placed as appropriate to the need. Signboards and posts shall have earth-tone colors to the degree possible.

(g) Land management and non-recreational facilities. Land management activities, including forest management, and non-recreation facility developments may range from inconspicuous to dominant, but shall be consistent with this subsection and with the management objectives established for the area by the master plan. Management parameters include:

1. 'Visibility of management activities.' To the degree possible and practicable, management activities, including forest management and agricultural activities, shall be designed to harmonize with the topography and other landscape features; and visual quality management techniques shall be prescribed, to the degree feasible and practicable, as appropriate for the specific management objectives, resource capabilities, and the degree and type of aesthetic concern for the area;

2. 'Resource management structures and other non-recreational structures.' Resource management structures or developments, such as dams, dikes, ditches, constructed ponds and fish habitat improvement devices, may be visible but shall blend in with the surrounding landscape and vegetation to the degree practicable and feasible. Other types of non-recreational structures may be authorized if consistent with the management objectives for the area;

3. 'Forest management.' Any forest management activity or technique authorized for the area shall be specified in the master plan, including the extent, timing and frequency of any activity or technique. The following, also, shall apply:

Note: The level of detail regarding the extent, timing and frequency will be as specific or general as appropriate.

a. Treatment and disposal of slash along designated recreational trails and public roads shall be as specified in the master plan; and

b. Any timber salvage following a natural disturbance shall be consistent with the classification and management objective for the area;

4. 'Forest opening creation and maintenance.' Natural or artificially created forest openings that are compatible with the area's management objectives may be maintained through mowing or cutting of brush and small trees or the use of herbicides; and

5. 'Prescribed burning.' Prescribed burning and permanent, constructed firebreaks are authorized.

(h) Non-motorized recreation area. Non-motorized recreational use areas may be designated by the master plan. All provisions of this subsection apply, except as follows:

1. Internal public access and use, including access to campsites, shall be only by non-motorized means, except as provided for in subds. 2. and 3. Management areas with public highway crossings may be designated with this classification provided the objectives of this classification can be substantially met.

2. Motor-related uses that may be authorized by the master plan include public motor vehicle access roads to parking areas located on the periphery of the area and to water access sites when other practical alternatives are unavailable; and electric motor-powered craft operated at slow, no-wake speed.

3. Disabled persons may access the area on designated roads or trails by means of a motor vehicle or access waterways by means of an electric motor-powered watercraft operated at slow, no-wake speed with a permit issued by the department.

4. Unauthorized motorized watercraft shall be restricted to the maximum degree possible.

5. The use of motorized vehicles and equipment is permitted in the area for logging and other management or maintenance activities by the department or its contractors engaged in management activity.

(7) TYPE 4 RECREATIONAL USE SETTING. In the master plan a Type 4 recreational use area shall be consistent with the following:

(a) Management objective. The objective of this setting is to provide areas offering opportunities for intensive recreational use activities and experiences. Facilities, when present, may provide a relatively high level of user comfort, convenience and environmental protection.

Note: Some areas with this classification may have few developed facilities, while others may have highly developed facilities or may be large facility complexes. Examples of areas that typically may be included under this classification are picnic areas, campgrounds, shooting ranges, field trial areas, educational sites, designated state trails and may include water bodies characterized by high levels of intensive uses, such as power boating and jet-skiing.

(b) Perceived remoteness. The sights and sounds of human activity typically are common or prevalent.

(c) Social contact. People typically are encountered within the area. Use types often are mixed and may be highly diverse.

(d) Access. Access throughout the area is readily available on fully and moderately developed roads and on fully, moderately and lightly developed trails. Public access may be by both motorized and non-motorized means.

(e) Recreational facility development. Facility development and landscape alterations shall be in harmony with the setting and type of intended use. The following shall apply:

1. Campgrounds and developed day use areas shall be designated by the master plan as either rustic or modern. Rustic sites shall be consistent with subd. 4, and modern sites shall be consistent with subd. 5.

2. Recreational trails are not limited; however, for each designated trail the master plan shall specify the type of trail and its authorized use.

3. Moderate to high levels of environmental protection and mitigation measures may be present, but shall be in harmony with the character of the site to the degree feasible and practicable.

4. Rustic recreational facilities shall be consistent with the following: a. Facilities provide for basic user needs and comforts. The design of buildings and other structures typically are simple; however, some may be somewhat refined and moderately complex.

b. Rustic campgrounds. A rustic campground shall have fewer than 75 total campsites, and the distance separating campsites shall be typically 100 feet to 200 feet but may be greater. Campgrounds established prior to the effective date of this rule [*revisor insert date*] which have more than 75 total campsites or do not meet the separation distance standard, but otherwise meet the standards of this subdivision and are capable of substantially providing a rustic camping experience, may be assigned this classification. The facilities typically provided in a rustic campground include: campsites with tent pad, fire ring, picnic table and parking for a vehicle and trailer or a RV unit, either gravel or asphalt roadways; lighting on buildings; a hand pump water supply; vault type toilets; a recreational vehicle dumping station on site or in the area and trash collection receptacles.

Where appropriate, paved paths and trails, firewood concessions, a pressurized water supply, small open play area, and public telephone may be provided. The following facilities are not authorized for rustic campgrounds: electric hook-ups for recreational vehicles, except for a site occupied by a campground host; showers; flush type toilets and playground equipment.

c. Rustic day use areas. The facilities typically provided in a rustic day use area include picnic tables and grills, a hand pump water supply, vault type toilets, a small open play area, a parking area and shelter building. Where appropriate, the following facilities may be provided: pressurized water supply, electricity in buildings, limited playground equipment, and a swimming beach with changing stalls. The following facilities are not authorized for rustic day use areas: flush type toilets, large open play areas, concession stand, baseball diamond or volleyball pits, bath house, interpretive center and amphitheater.

5. Modern recreational facilities shall be consistent the following: a. Facilities provide a moderate to relatively high level of user comfort and convenience. Buildings and other structures may be simple designs or designs that are complex and refined.

b. Modern campgrounds. These may be comprised of a single campground or a large campground complex, and typically have 75 or more campsites. The separation distance between campsites may vary, although 100 feet shall be used as a guideline. The facility development options are not limited; however, the following facilities usually are provided: electric hook-ups for recreational vehicles, hand pump or pressurized water supply, vault or flush toilets, a recreational vehicle dumping station on-site or nearby, asphalt roadways, open play areas, paved paths and trails, lighting on buildings and public telephones. Examples of other facilities that may be present include playground equipment, full-service concessions, showers and laundry facilities.

c. Modern day use area facilities. The facility development options are not limited; however, the facilities provided typically include picnic tables and grills, hand pump or pressurized water supply, vault or flush toilets, large, open play areas, playground equipment, parking lots, shelters with electricity and hard-surfaced trails. Other facilities or services that also may be present include a concession stand, baseball diamond or volleyball pits, bath house and well-defined swimming beach and sunning area, interpretive center and amphitheater.

(f) User management. The amount and type of visitor controls shall be appropriate to the area's type of use and need.

(g) Land management and non-recreational facility development. Any land or vegetation management activity or non-recreational facility development shall be consistent with this subsection and with the management objectives for the area established by the master plan. Management parameters include the following:

1. Any land or vegetation management prescription or method that supports the master plan's management objectives for the area and is consistent with the site's ecological capability may be used. Management activities or techniques authorized for the area shall be specified in the master plan, including the extent, timing and frequency of any activity

or technique. Management activities or techniques used in implementing the plan may not exceed the parameters identified by the master plan for the management area;

2. Resource management developments such as dams, dikes, ditches, habitat improvement devices, and constructed ponds and other types of non-recreational structures, that harmonize with the surrounding landscape to the degree practicable and feasible may be present; and

3. Visual quality management techniques shall be prescribed, to the degree feasible and practicable, as appropriate for the specific management objectives, resource capabilities, and the degree and type of aesthetic concern for the area.