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Executive Summary

This Natural Education Reserve (Reserve) Management Plan is the compilation of several efforts over the years including Site Inventory and Evaluation (1976) conducted by Gary Yockey, District Conservationist, Soil Conservation Service (SCS); a Critical Area Treatment Plan (1984) drawn up by Tom Adams, District Conservationist, SCS; and a Evaluation and Natural Features Inventory of the Grand Traverse Natural Education Reserve (1997) and Garfield Township's 95-acre section of the Reserve (2006), by Greg LaCross, Ecologist, Environmental Surveys and Analysis.

On the morning of July 4, 1976, some 250 Grand Traverse County residents met at a quiet wooded picnic site near the Boardman River to take part in the permanent dedication of 310 acres of undeveloped land along the river. The land, known as the Natural Education Reserve, centered around Sabin and Boardman Dams and was set aside in perpetuity by the Grand Traverse County Board of Commissioners to serve as an ideal setting for environmental study and observing nature. A 19 member Natural Education Reserve Advisory Commission was established in 1974 to help assist the County Board in planning the by-laws, land use, and rules and regulations for the future Natural Education Reserve.

The members consisted of the following:

Al Brown	Bill Scharf
Paul Hazelton	June Mason
John Langworthy	Florence Oakes
Glenn Gregg	Martin Melkild
John Rennie	Dick Strong
William Botti	Norma Hutson
W.L. Gelston	Jim Reynolds
Ted Johnson	Ford Kellum
Gordon Hayward	George Ferrar
Jack Hood	

After the dedication, structures such as steps, bridges, and boardwalks were constructed and use of the property increased, but management and long-term maintenance waned. As a result, the property became severely degraded during the 80's and early 90's.

The Conservation District recognized similar needs at other area parklands and in 1993 proposed that the City and County join in a cooperative Parkland Management Program where the District would manage the City's Brown Bridge Quiet Area and the County's 310 acre Natural Education Reserve (Reserve). Rotary Charities of Traverse City provided a start up grant and Traverse City Light & Power participated financially as well.

For the next fifteen years, the Cooperative Parkland Management Program grew in popularity and demand with the local community in two primary areas, guided hikes and land management services. As the District repaired and improved trails, a greater number of people and school groups began using the trails. The District began offering guided hikes in the mid 90's and by the year 2000 over 1,000 kids were participating in what is now known as the Discovery Hikes program. The need for a nature center in northern Michigan was apparent. The District broke ground in the fall of 2007 and celebrated the Grand Opening of the Boardman River Nature Center in August of 2008 near the Sabin Pond Trailhead on the Reserve.

Mission Statement

"The mission of the Grand Traverse Natural Education Reserve is to provide safe, enjoyable, quiet recreational experiences and environmental education opportunities while protecting the resource for visitors to the Reserve."

Vision Statement

"To enhance and protect the integrity of the Grand Traverse Natural Education Reserve to provide for quiet recreation and environmental education for generations to come."

Objectives

Specific objectives to reach this vision include:

- 1) To coordinate administrative and financial support to ensure that the Reserve is adequately funded and administered in a fiscally responsible manner.
- 2) To maintain and encourage biological diversity of both native plant and animal communities.
- 3) To maintain a trail system and ensure any new trails protect sensitive areas as identified in this Management Plan.
- 4) To work with local law enforcement officials to develop an effective system to enforce Reserve rules.
- 5) To continue a Natural Education Reserve Advisory Committee with representation from Garfield Township and direction of the County Administrator to ensure that the project objectives and goals are being accomplished in a timely and prudent way.
- 6) To secure through acquisition important lands adjacent to the Nature Reserve; continue to seek ways to re-connect the Boardman Trail along the west side of Boardman Pond.
- 7) To establish at the Reserve an educational nature center and to develop and conduct natural history and conservation education programs.
- 8) To encourage wildlife, environmental, natural features and historical education through literature, guided tours, interpretive signs, and historical displays.
- 10) To monitor and establish methods to improve habitat for rare and endangered animal and plant species that might occur at the Reserve.
- 11) To remove non-native plant communities in the Reserve when possible.
- 12) To provide passive (quiet) recreational opportunities for the community.

Management Recommendation Summary

This document lays out a general plan for achieving the vision stated above.

Management will be focused on three primary areas: providing natural education and passive recreational opportunities and protecting natural features. To this end, management activities will be focused on outdoor education/recreation and activities needed to maintain the integrity of natural features on the property. Annual work plans will be created and approved to address specific management tasks needed on the property.

Property Overview

Located in Grand Traverse County, Michigan, the Grand Traverse Natural Education Reserve is an island of meadow, forest, river and wetland ecosystems. The Reserve encompasses approximately 505 acres just three miles south of Traverse City, on Cass and Keystone Roads. Of the 505 acres, 356 acres is owned by Grand Traverse County, 95 acres is owned by the Charter Township of Garfield, and 54 acres is owned by the City of Traverse City (Figure 1).

On July 4, 1976 the original 310 acres were "dedicated in perpetuity by the people of the Grand Traverse Area for nature study and quiet recreation" and formally designated as Parkland by the County's Board of Commissioners.

The County wasn't the only entity to recognize the value of this parkland. Once the Reserve was established, in August of 1976 the City of Traverse City signed a resolution to manage their Keystone Dam property, 54 acres, along with the 310 acres of County land. The County continued to add to this valuable parkland throughout the years and in 1990, purchased 6.23 acres off of Beitner Rd. from D. Ward Templeton. In 1998, the County purchased 24.2 acres on the northeast side of Sabin Pond from the Slaughter family with funds from the Michigan Natural Resources Trust Fund (MNRTF). In 2000, the County added an additional 15.1 acres to the southeast side of Sabin Pond, again thanks to a MNRTF grant. This land acquisition was part of a larger purchase from Joseph and Bessie Meyers with another 79.7 acres that was purchased for the Keystone Park and Soccer Complex.

In 2002, Garfield Township secured the 'Boardman Valley Nature Preserve' to include as part of the Natural Education Reserve. The property was purchased with a MNRTF grant. The Grand Traverse Regional Land Conservancy (GTRLC) donated 49 acres between the YCMA and the Reserve to give the Township its needed matching funds for the Trust Fund grant. In 2004, the Oleson family stepped up and purchased the YMCA building and donated it to the Township bringing the total acreage to 95.

Generally speaking, the Reserve encompasses the land from Beitner Rd. at Keystone, north to South Airport Road. Cass and Keystone Roads border the Reserve to the west and east (Figure 1). The Boardman River is a prominent feature and great asset to the Reserve as well as the entire Grand Traverse Region. The watershed of the Boardman is 182,800 acres in size, with tributaries beginning 30 miles east of Traverse City. The tributaries flow through state forestlands forming the main branch that begins to flow northward approximately 7 miles south of Traverse City, as it makes its way to Grand Traverse Bay. The Boardman is a State designated Blue Ribbon Trout Stream and Natural River. An estimated two million recreational user days are experienced in the Watershed each year.

Two earthen dams along the Boardman River create Sabin and Boardman Ponds within the Reserve. A third dam on the southern end of the property washed out in 1961, creating the impressive Keystone Rapids. At the time this document was written, Grand Traverse County and the City of Traverse City had just completed a two-year study to determine the fate of three hydroelectric dams, including the two dams within the Reserve. For more information on the results of that study, visit www.theboardman.org. If the County decides to leave the dams in-place, little will change regarding the management of the Reserve. If it is decided to remove/breach the dams, management of the newly exposed bottomlands and River channel will require a separate restoration and recreational plan that will become an addendum to this Plan.

Natural Area

The Reserve lies within a riverine channel on shallow outwash, over ground moraine. This channel formed, since the last glacial advance and retreat approximately 12,500 years ago, as the headwaters of a small stream cut southward, from the present Traverse City area, through the Manistee moraine, and captured the westerly-flowing proto-Boardman River, thus diverting its flow northward. This is now called the Boardman River. The Reserve contains portions of the current river's flood plain and previously formed fluvial terraces (Algonquin, Nippissing, and Algoma), which are associated with different lake stages in the formation of the Great Lakes. The present flood plain lies at an approximate elevation of 600 feet above sea level, whereas the morainal summit, through which the channel cuts, is an average of 360 feet higher (960 feet above sea level).

With peak elevations at approximately 700' above sea level, the Reserve has an obvious topographical trend of declining elevation to the north. The southeast corner of the Reserve has an elevation of 686', and the southwest corner is closer to 700'. The bed of the Boardman River rests at elevations of approximately 640' through the southern half of the Reserve. At Keystone Rapids, just upstream of the site of the old Keystone Dam, the grade of the river declines more severely to an elevation of approximately 560'. According to local canoeing and kayaking authority, John Lewis (1998), these rapids are "some of the best whitewater in Lower Michigan." The newly formed Lone Pine Rapids that were created when Boardman Pond was drawn down in 2007, gave the public a glimpse of the type of River harnessed behind the dams. Boardman Dam is 41 feet high and Sabin Dam is 23 feet high, making the average drop of the River through the Reserve approximately 32 feet per mile. The average drop over the entire river system is 8-feet per mile. North of the dams, the river continues its journey toward Grand Traverse Bay at an elevation of 580'. Surrounding banks appear to maintain an elevation of 600', with maximum bank elevations of 660' to 680', creating riverbanks of 50' to 100' - an impressive height to view the river. The east-west boundaries of the Reserve are seated at elevations between 620' and 660'. The northern boundary of the Reserve rests at an elevation of 600'. Using these values, the elevation of the property declines approximately 100' over an approximate 18,000' length of property; this constitutes a grade of .0055%.

Presettlement flora

Garfield Township, south of Traverse City, was described by L. S. Scranton in 1850 as follows:

"[The] remainder of the township [Garfield] is timbered lands and most of it is of an excellent quality of soil and beautiful timber of sugar maple [*Acer saccharum*], hemlock, beech, elm, ash, lynn [*Tilia americana*], and cedar. The sugars in almost every part of the township have been tapped by the Indians."

L. S. Scranton - Deputy Surveyor, 1850

In addition, Alvan Burt described the same area earlier:

"The soil is generally sandy. The timber is mostly beech, sugar, hemlock, and elm".

Alvan Burt - Deputy Surveyor, 1839

A summary of the 1850 field survey notes taken as part of the Public Land Survey conducted by the U.S. General Land Office is found in Appendix 1 of the Floristic Inventory. This historical information is, although limited, a valuable description of the natural vegetation that existed near or before the beginning of European settlement.

Only two section lines pass through the present Reserve boundary and vegetation was documented only along these lines. However, when one examines these and descriptions of the entire county, they describe the Boardman River Valley prior to European settlement, as having significant conifer swamp habitat adjacent to the river with hardwood-conifer swamp habitat found within the flood plain. Similarly, ascending from this lowland river channel, records describe an expansive mesic northern forest dominated by beech, sugar maple, hemlock, linden, ash and elm found on the Manistee moraine.

An anecdotal record of timber harvesting follows.

"In one year Hannah, Lay and Company mills produced 12,697,200 feet of lumber... Records of that year made note of one tree 164 feet high, the first limbs of which were 100 feet from the ground. The tall pine scaled 8,508 board feet, and when felled, lost a 32-foot length of its top timber by shattering."

A.V. Williams (1982)

Based on this and similar descriptions in the Natural Features Inventory (LaCross, 1997) it is easy to see the changes which have taken place throughout Grand Traverse County since European settlement.

Presettlement fauna

Williams (1982) also provides an anecdotal description of mammalian fauna within the Boardman River Valley that includes an account of less common species such as elk, mountain lion, lynx, beaver, river otter, fisher, black bear, and gray wolf. The historical ranges for all of the above do, in fact, include Grand Traverse County (Burt 1988). Similarly, the richness of avian and herptile fauna almost certainly decreased after European settlement. Some species of birds are no longer found in Michigan (and more specifically, Grand Traverse County) (Brewer et. al. 1991). The diversity of avian species has increased, however, since the beginning of this century, following the return of forest lands, but this diversity, like mammalian diversity, is still less than that which existed before European settlement.

Post Settlement Activity

The original Reserve was formally dedicated as parkland on July 4, 1976. Before its designation, this area and the others that subsequently were acquired later were subject to a great deal of human activity. A total of three dams, two of which still exist, have been constructed between the north and south boundaries of the Reserve. The first dam, which created Boardman Pond, was constructed in 1894 at the existing Boardman Dam site (Cass Road). The second dam, Sabin Dam, was constructed in 1907 (and later expanded in 1930) at the north end of the Reserve. This dam created Sabin Pond. A third dam, Keystone Dam, was built in 1909 at a location near the Oleson Bridge Parking Area. However, this dam washed out in September 1961 during a heavy rainstorm. After this event, the river's course changed, and the 12-acre impoundment, which the dam created, disappeared. The location of this previously impounded area is still evident due to vegetative differences, which are addressed in the Results section of the County's Natural Features Inventory.

In addition, all land within the Reserve was logged and a majority converted for agricultural use. Plat maps from 1895 show only one homestead within the present Reserve boundary with 5 other constellate settlements adjacent to the Reserve. One assumes that the current area found within, and immediately adjacent to, the Reserve consisted of properties owned and farmed by these

individuals. Finally, aerial photographs from 1952, and present, show a steady re-vegetation of the area since the original period of logging and agricultural use.

Administration

Governing Body

The County's Natural Education Reserve is owned by Grand Traverse County and the County Commission is ultimately responsible for funding and management of the Natural Education Reserve. A Parks and Recreation Board has been established by the County Commission. This board oversees the County's parks and natural areas and makes recommendations regarding budgets and management to the Commission and Parks and Recreation staff.

The northern 95-acre portion of the Natural Education Reserve is owned by the Charter Township of Garfield. The Township is responsible for funding that portion of the Reserve but has agreed to use and develop the property in conjunction with the County owned Reserve, although, it maintains the right to alter rules and regulations as it sees fit. The property was purchased with funds from the Michigan Natural Resources Trust Fund Grant, which supports hunting, fishing, and other wildlife related opportunities.

Advisory Committee

The County authorized the creation of a citizen advisory committee as a means for public input regarding management of the property and to ensure the public's vision is carried out. The advisory committee makes management recommendations to the Parks and Recreation Board for final approval. The by-laws for the Advisory Committee may be found in Appendix 7.

Maintenance

A property manager appointed by the Grand Traverse County Parks and Rec. Board shall perform or oversee all maintenance required at the Natural Education Reserve. This person or entity shall prepare an annual maintenance report for submittal to the advisory committee. A scope of services for the property manager is listed in Appendix 8- Schedule A, District's Scope of Services.

Maintenance/ fieldwork at the Reserve is focused on three primary areas, which are:

- 1.) User safety and enjoyment.
- 2.) Outdoor education
- 3.) The protection of natural features

Reserve Rules

Please see Appendix 7 for County Park rules.

Enforcement

The rules at the Natural Education Reserve should be approved by the advisory committee and submitted to the County for adoption into local ordinance. The property manager shall also pursue a liaison with a local law enforcement agency to ensure rules are adequately enforced.

Emergency Access

Emergency access is provided at the nine trailheads at the Reserve (Figure 2). Emergency personnel shall be given accurate trail maps and keys to any locked gates on the property.

Publicity

Managers shall continue to promote the Reserve through trail maps and brochures distributed at locations such as the Civic Center, Chamber of Commerce, and the Visitors Bureau (Figure 3). Further, the addition of the year round Boardman River Nature Center on the property will likely increase visibility in the community. For more information, visit www.gtcd.org.

Future Property Acquisitions

Efforts should be made to acquire adjacent, undeveloped properties from willing landowners. This could create a buffer between the Reserve and the highly developed corridor along Cass Road. Priority should be placed on the house just south of the Nature Center and parcels on the northern section of the Reserve, west of the Boardman River.

Recreation Management

User Groups

The grounds and trails of the Natural Education Reserve are intended to provide opportunities for outdoor education and passive recreation. Passive recreation is considered non-organized, quiet, and non-consumption. The Reserve will accommodate many recreational users, including but not limited to:

- Hikers
- Trail Runners
- Cross Country Skiers
- Nature Enthusiasts
- Dog Owners
- River Users

In order to ensure that user needs are being met, it is important that the managers of the Natural Education Reserve stay abreast of the numbers and types of users on the property. This may be accomplished with comment cards and a place to file them at each trailhead and the Nature Center.

Current Trails

There is a well-developed trail system within the Reserve, which consist of approximately seven miles of trails that traverse the property in a north-south direction (Figure 2). The trails are, for the most part, single-track trails with an 18-24" tread and a four by eight foot corridor. The trail system crosses many different habitat types and brings users to a number of scenic overlooks and river access points. The trails south of Sabin Dam include multiple stretches of boardwalk and sets of stairs. There is a paved barrier free trail that begins at the Lone Pine Trailhead and follows the river north for approximately one half mile. A noticeable shortcoming is a disconnect in the trails around Boardman Pond. This break in the trails essentially separates the Reserve into two sections and prevents users from traversing the length of the property.

Proposed Trail System

It is recommended that existing trails be utilized when appropriate and the system expanded as needed. One of the foremost needs is to connect the trail on the west side of Boardman Pond in order to form an unbroken route from South Airport Road to Beitner Road. It is also recommended that in the future a footbridge be established near the Lone Pine Trailhead. This, in combination with, the Oleson Bridge would create a valuable loop trail at the reserve.

The trails north of Sabin Dam are very flat and may be acceptable as biking and/ or barrier free trails. Bikes could be directed east at Sabin Dam to Keystone Road to continue south to the County's recreation complex on Keystone Road. This would also provide a valuable link to the

Boardman River Nature Center. The creation of additional universally accessible trails would be a valuable asset to the property and the community and should be encouraged where practical.

Because the soils at the Reserve are prone to erosion, any trail will need to be constructed and monitored carefully to ensure erosion does not become a problem. The County may wish to partner with outside organizations specializing in trail design to ensure trails are sustainable and user friendly.

Future Trail Construction

Future trail construction should be kept to a minimum and done in a manner that minimizes environmental impact and disruption to user activities. If new trails become established by frequent visitor use, these new trails should either be blocked or properly marked and maintained to prevent erosion.

Trail Surfaces

Trail surfaces should be designed first and foremost to limit erosion. Secondly, they should be easily maintained and provide an enjoyable experience for users. Woodchips are an easily renewable and inexpensive way to surface trails. Woodchips should be used where necessary to prevent erosion, and trail surfaces should be left “natural” when practical. Barrier free trails should provide a hard, flat, smooth surface and at a minimum conform to ADA requirements.

Adjacent Lands and Trail Considerations

The Natural Education Reserve is connected to the TART trail system at S. Airport Road and in the future could connect to trails on other public property. These connections should be encouraged, as they will add valuable recreation opportunities and increase accessibility for users. Partnerships with other organizations such as TART or Garfield Township may prove valuable for sharing trail maintenance costs.

Trailheads & Parking

Parking areas and corresponding trailheads have been established at nine locations at the Reserve (Figure 2).

Each trailhead/parking area should have a garbage bin, as well as, an information station/kiosk. The parking areas should be bordered by fence to clearly delineate their bounds and prevent vehicles from entering the trails. The vegetation around parking areas should be trimmed to maintain a high degree of visibility from the road. It may be desirable to pave the existing gravel parking lots to minimize maintenance needs. Managers should work with the Road Commission to establish turning lanes for the Lone Pine and Oleson Trailheads.

Restrooms and Other Facilities

At this time restroom facilities are located at the Beitner Canoe Launch parking area, as well as the Oleson Pavilion and Nature Center at the Sabin Pond trailhead. These facilities seem adequate for normal use of the property. Portable facilities may be used for special events with the property manager’s permission.

Forest Management

Management Unit Review

To effectively explain forest management recommendations within the property the land was broken into management units. These units are based on the results of a floristic inventory performed on the property. The units were broken into five categories based on vegetation. The categories are: conifer swamp, mesic northern forest, hardwood conifer swamp, forest regeneration, and conifer plantation. A map of the management units can be found in Figures 3 & 4 of the County's Floristic Inventory and Figure 3 of Garfield Township's. The units, for the most part, do not require active management. Most management activities will be focused along trail corridors. Specific recommendations may be found in the Floristic Inventories in Appendix 4 & 5.

Natural Communities

The natural communities consist of a conifer swamp, mesic northern forest, and hardwood conifer swamp. These communities occur in isolated areas throughout property.

Artificial Communities

Artificial communities include conifer plantations and areas of forest regeneration (successive regeneration). These communities are the result of human activities on the property.

Timber Harvesting

Timber harvesting for monetary gain should be done only with the guidance of a Forest Stewardship Plan and should not negatively affect the natural integrity or recreational uses of the property. Revenue generated from any harvesting should stay at the Reserve. Harvesting for uses within the property (e.g. fencing, erosion cribs, etc.) may be useful. Harvesting for this purpose shall be conducted only with approval of the property owners. Management should be granted the right to harvest trees in order to keep the integrity of the forest from deteriorating or if the safety of the visitor is in question. The removal of dead trees along trails is an important issue. However, dead trees (standing and fallen) are important to the ecological health of the natural area and should be retained if not deemed hazardous.

Insect and Disease Control

Damage from insects and diseases can be extremely serious to the health of a forest, however, there are no known problems existing on the property. The manager should monitor for new insect or disease damage. A few of the insects and diseases that are or could become possible problems are listed here:

Insects:

- Gypsy Moth – An exotic from Europe, the gypsy moth is the main defoliator of forests in the Northeastern U.S.
- Emerald Ash Borer – Another non-native species, emerald ash borers originally come from East Asia. As its name implies, it only harms ash trees.

Diseases:

- Oak Wilt – This disease kills thousands of oaks each year in the Eastern U.S. The disease, once established, spreads to other oaks mostly through contact with infected trees' roots. This is especially so in the Natural Area because sandy soils are more conducive to this type of spread.

Non-Native Plant Control

The manager should remove non-native invasive species whenever possible. The species of most concern are spotted knapweed, purple loosestrife, and autumn olive. There are significant amounts of these species established on the property. Therefore, it is important that management work to reduce the size of existing colonies and monitor the situation to ensure that new colonies do not become established at the Reserve.

Wildlife Management

A wildlife inventory was performed on the property in 1996 and can be found in the Natural Features Inventory (LaCross, 1997). This study found one vertebrate species (*Clemmys insculpta*), which was listed as being of special concern by the Michigan Natural Features Inventory. In addition, a large number of bird (avian) species (107), 18 mammalian, and 11 amphibians or reptiles (herptile) species were recorded.

Birds (Aves)

Eighty three of the 107 avian species recorded by this study have either confirmed, probable, or possible breeding status within Garfield and/or Blair Townships (Appendix 4). Township designation is fairly broad however, and it is certain that not all of the 83 species listed do, in fact, establish nesting territories within the Reserve. A percentage of the 107 bird species recorded are most certainly transitory migrants who are found within the Reserve for only a short time while 'stopping over' on their way north or south. Also, some species who do breed within these townships may not be found within the Reserve due to habitat restrictions. Some forest interior species in particular would not find habitat that is of a size sufficient for territory establishment. Conversely, the majority of these 83 species very probably do nest within the Reserve given the diversity of habitats found there and its relatively lower levels of human-based disturbances.

Mammals

The 19 mammalian species recorded (Appendix 4) have varying habitat specificity. Over half (10) of these species are considered to be either 'edge' species or have a specificity for open fields (edge species include *Odocoileus virginianus*, *Sylvilagus floridanus*, *Procyon lotor*, *Mephitis*, *Vulpes*; open field species include *Zapus hudsonicus*, *Scalopus aquaticus*, *Citellus tridecilineatus*, *Marmota monax*, and *Microtus pennsylvanicus*). There were 4 wetland associated species (*Ondatra zibethicus*, *Castor canadensis*, *Mustella vison*, and *Condylura cristata*) and 5 species associated with forested habitats (*Tamiasciurus hudsonicus*, *Blarina brevicauda*, *Tamias striatus*, *Sciurus carolinensis*, and *Peromyscus maniculatus*). This diversity of species reflects the varied and fragmented nature of plant community cover found within the Reserve.

Amphibians and Reptiles (Herptiles)

The 11 herptile species found within the Reserve all have historical, global ranges which include Grand Traverse County and were found within a variety of habitats. The special concern species, *Clemmys insculpta*, (wood turtle), will be addressed later in this plan.

Hunting and Trapping:

A. Hunting, trapping, or removal of any wildlife is prohibited on County property in the Reserve. Hunting is allowed on the Garfield Township portions of the Reserve by permit only. The removal of wildlife may be used as a tool for management purposes if other avenues are cost prohibitive or otherwise not practical.

Note: Certain species such as deer and beaver can degrade habitat and recreational opportunities if populations become too large.

Special Concern Species:

As noted above, *Clemmys insculpta* (wood turtle) was found at the Reserve and is listed as being of special concern by the Michigan Natural Features Inventory. Therefore, trails and other amenities that encourage human activity should be directed away from wood turtle habitat. Habitat improvement projects may also be undertaken in order to promote this species within the Reserve.

Watershed Management

Surface Water

The surface water features on the property are dominated by the Boardman River and its associated impoundments. However, there are also emergent wetlands and swamps throughout the Reserve. Trails and other recreational resources should be planned and maintained in such a way that minimizes impacts to these water features.

Fishing

Fishing is allowed at the Reserve and should be conducted in accordance to the State of Michigan's Rules and Regulations.

Erosion

Erosion caused by human activities and the introduction of excess sediment to water bodies is the primary threat to surface waters on the property. An established trail system with appropriate surfaces will minimize erosion caused by foot or bike traffic. Constructing boardwalks or bridges will also minimize stream bank damage and sediment delivery by protecting stream or wetland crossing points on any future trails.

Adjacent Lands Impact

The water features on the property may also be impacted by land use or management changes on lands adjacent to the property. The township should work closely with adjacent landowners to minimize negative impacts from these lands.

Education and Interpretation

Signs

1. Informational Signs

Trails should be clearly marked to provide a safe and comfortable atmosphere for the visitor. Signs should be created according to the County's unified signage plan and use international symbols.

2. Interpretive Signs

The Advisory Committee or property manager shall decide on topics for interpretive signage and shall coordinate with the Nature Center on topics and locations.

Trailhead Kiosks

The kiosks are a very important aspect of the Reserve and should be located at all of the nine parking areas. Kiosks are what the visitor will encounter upon arrival and the last thing they see as they leave. This unique situation presents an opportunity to not only orient the visitor through the use of trail maps, but to educate them on management practices and etiquette. Management should prepare different ideas/topics for interpretive or informational projects to be placed within the kiosks.

Group Use

All forms of outdoor education are vital in keeping with the vision of the Natural Education Reserve. Larger groups should contact the Reserve manager before use. It is recommended that groups using the Reserve contact the Nature Center if they wish to learn about the Reserve history and environment.

Research

Research regarding the natural and historical qualities of the Natural Education Reserve should be encouraged. The Advisory Committee shall review and make recommendations to the County for prior approval of all research projects. This research will be beneficial to the ongoing management and improvement of the Reserve.

References

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Appendix 1
County's Resolution

RESOLUTION No. 3-74

WHEREAS, the County of Grand Traverse is the owner of a certain parcel of real property, the full legal description of which is attached hereto and made a part hereof, which property is hereinafter known as the "Boardman River Property," and;

WHEREAS said Boardman River Property represents some land within the County which still remains in an unimproved state and adjoins a watercourse, and;

WHEREAS said Boardman River Property contains certain fragile, unique features which are being destroyed throughout the state by development of watershed land, and;

WHEREAS the Grand Traverse County Board of Commissioners believes the Boardman River Property represents a public trust which should be preserved and protected for future generations;

NOW, THEREFORE BE IT RESOLVED that the Grand Traverse County Board of Commissioners hereby dedicates the Boardman River Property as a natural education reserve. The terms of this dedication are as follows:

1. The Board of Commissioners reserves the right to make rules and regulations respecting the use of such land as a natural education reserve which regulations shall be calculated to preserve and enhance the natural character of the Boardman River Property in keeping with its public use for that purpose.

2. The Board of Commissioners reserves the right to alter, maintain, repair, remove and relocate any or all of the improvements located on such land providing the natural character of the land is improved or not impaired.

3. The Board of Commissioners by its chair may appoint an advisory commission to assist the Board

I HEREBY CERTIFY THIS COPY TO BE A TRUE AND CORRECT COPY OF THE RECORD ON FILE WITH THE OFFICE OF COUNTY CLERK

LINDA COBURN
GRAND TRAVERSE COUNTY CLERK
BY: *Linda Coburn*
DEPUTY COUNTY CLERK
DATE: *April 2, 2008*

of Commissioners under this dedication.

4. In its discretion, the Board of Commissioners may permit the erection of one or more structures upon the property for use in nature education.

5. Fishing, hunting, swimming and boating may be permitted by rule so long as such uses shall not impair the use of the property in nature education.

6. The Board of Commissioners reserves the right to exchange portions of the property for contiguous parcels if the result will be to preserve or enhance the natural character of the resulting tract.

7. The Board of Commissioners reserves the right to change the use of not more than five percent (5%) of the total area to ancillary public recreational uses if said uses do not detract or impair the use of the remainder.

8. No use shall hereafter be made of this land except as provided herein. If a future Board of Commissioners wishes to depart from this Dedication, it may submit the proposed change to the voters of the County at a special or general election. If two-thirds of the votes cast shall support the new use, the use may be changed and not otherwise.

GRAND TRAVERSE COUNTY BOARD
OF COMMISSIONERS

By: JACKSON BENSLEY
Chairman

I, Anita Kucera, Clerk of the Board of Commissioners, hereby certify that the foregoing Resolution was introduced and adopted at a session of said Board convened in the City of Traverse City on _____, 1974, by a _____ vote of the members.

Dated: _____
ANITA KUCERA
County Clerk

HEREBY CERTIFY THIS COPY TO BE A TRUE AND CORRECT COPY OF THE RECORD TO FILE WITH THE OFFICE OF COUNTY CLERK
LINDA COBURN
GRAND TRAVERSE COUNTY CLERK
BY: Linda Coburn
DEPUTY COUNTY CLERK
DATE: April 9, 2018

Appendix 2
City of Traverse City's Resolution

CITY OF TRAVERSE CITY

RESOLUTION

WHEREAS, the City of Traverse City is the owner of a certain parcel of real property, the full legal description of which is attached hereto and made a part hereof, which property is located adjacent to certain lands owned by the County of Grand Traverse dedicated to use as a Natural Education Reserve, said City property being commonly known as the Keystone Dam property, and

WHEREAS, said Keystone Dam property is similar to the County's Boardman River property in that it has features which are being rapidly changed or destroyed by development of watershed land throughout the area, and

WHEREAS, the Grand Traverse Education Reserve Advisory Commission has indicated a need for the use of this property in connection with its development of a Natural Education Reserve for use of the public as an educational study and recreational facility to be preserved and protected for the present as well as future generations, and

WHEREAS, the City recognizes that the use and development of the said City property in conjunction with the said County property will enhance the usefulness and value of each property in serving those educational and recreational purposes,

NOW, THEREFORE, BE IT RESOLVED that the City Commission of Traverse City hereby agrees to the use and development of the Keystone Dam property in conjunction with the County-owned Boardman River property for a Natural Education Reserve, to be developed and administered by the Grand Traverse Natural Education Reserve Advisory Commission as outlined in their plan of February 23, 1976 for the Traverse City Keystone Dam property, subject to the following terms and conditions:

1. The City of Traverse City retains ownership of said property.

2. The City Commission reserves for the City the right to make rules and regulations respecting the use of the land as a Natural Education Reserve, which regulations shall be calculated to preserve and enhance the natural character of the Keystone Dam property in keeping with its public use for that purpose.

3. The City Commission of Traverse City reserves the right to alter, maintain, repair, remove and relocate any or all of the improvements presently located on such land, provided that in so doing the City will take care to minimize any adverse effect on the natural character of the land.

4. The Grand Traverse Natural Education Advisory Commission will assist the City of Traverse City, upon request by the City, in the City's performance of the City's obligations and the City's exercise of the City's rights under this agreement.

5. The Grand Traverse Natural Education Reserve Advisory Commission shall have the right to place or erect any structure on the land only with the consent of the City Commission of the City of Traverse City.

6. Fishing, hunting, swimming and boating shall be permitted by rule so long as such uses shall not impair the use of the property in nature education.

7. The City of Traverse City reserves the approximate six (6) acres of land now used as a City tree nursery for growing of trees and plant materials and the right to expand said acreage at some future date after consultation with the Advisory Commission.

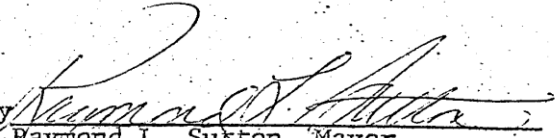
8. The Mayor of the City of Traverse City shall, with the approval of the City Commission, appoint two persons to serve on the Advisory Commission.

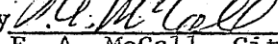
9. It is the intent of this resolution to permit the use of the said land for those uses outlined in the plan attached. However, the City reserves the right, after due notice to the Grand Traverse Natural Education Reserve Advisory Commission, to declare that said uses shall be terminated, and upon such declaration said uses shall be so terminated, provided, however, that, should the City so declare that such uses shall be so terminated or discontinued, the City shall compensate the Donor of any structures placed on said land for the value of such structures. The City recognizes, and in exercising this right shall consider, that the property may from time to time be scheduled for use by various persons and groups and that the exercise of this right of termination may affect third parties. The City will therefore exercise this right with a view to minimizing any inconvenience to the Commission in its operations.

10. The City reserves the right at all times to explore for, and/or mine and/or produce minerals on and from the land, and to use the property and the river for the production of energy.

11. The City reserves the right to continue such uses as presently exist or are carried on on the property.

CITY OF TRAVERSE CITY

By 
Raymond L. Sukton, Mayor

By 
F. A. McCall, City Clerk



City of Traverse City • Michigan

49684

Commission - Manager Form of Government

KEYSTONE PROPERTY DESCRIPTION

The northeast quarter of the southwest quarter and the south half of the southeast quarter of the northwest quarter all in section three (3) town twenty-six (26) North of Range eleven (11) West.

The southwest quarter of the northwest quarter and the northeast quarter of the southwest quarter of Section three (3), town twenty-six (26), North Range eleven (11) West.

Appendix 3
County's Quitclaim Deed

QUITCLAIM DEED

THIS INDENTURE, made this 15th day of September, 1969, between CONSUMERS POWER COMPANY, a Michigan corporation, 212 West Michigan Avenue, Jackson, Michigan, (successor by merger to Consumers Power Company, a Maine corporation), as First Party, and the COUNTY OF GRAND TRAVERSE, a municipal corporation, Courthouse, Traverse City, Michigan, as Second Party;

W I T N E S S E T H :

WHEREAS, First Party is presently the owner of two dams located on the Boardman River in Grand Traverse County, Michigan, commonly known as the "Boardman" and "Sabin" Dams, together with certain lands and interests in lands used and useful in connection with the maintenance of said Dams, the control of the water level of the reservoirs created by said Dams, and the use of said reservoirs, all of which are herein sometimes called the "Dam and Reservoir Property"; and

WHEREAS, the age of said Dams, and the cost of operating and maintaining the hydroelectric generating facilities associated therewith are such that their continued operation and maintenance for the purpose of generating hydroelectric energy may no longer be justified; and

WHEREAS, Second Party has an interest in the maintenance of said Dams and the preservation of said Dam and Reservoir Property for public recreational purposes, and for such public recreational purposes is desirous that First Party convey to it said Dam and Reservoir Property; and

WHEREAS, in consideration of the proposed use of said Dam and Reservoir Property for public recreational purposes, First Party is willing to convey said Dam and Reservoir Property to Second Party for the sum of One Dollar (\$1.00).

NOW THEREFORE, the said First Party, for and in consideration of the sum of One Dollar (\$1.00) the receipt of which is hereby confessed and acknowledged, does by these presents bargain, sell, remise, release and QUITCLAIM unto Second Party, its successors and assigns, Forever, all those certain parcels of land, interest in land, rights and privileges situate in the Townships of Garfield and Blair, County of Grand Traverse and State of Michigan, known and described as follows, to wit:

1. All that part of the W 1/2 of the SW 1/4 of the NE 1/4 lying N'ly and W'ly of the most S'ly and E'ly line of the backwater of the present dam located on the NW 1/4 of the NE 1/4 of said Section 34, T27N, R11W except the railroad right of way.
2. The NW 1/4 of the NE 1/4 of Section 34, T27N, R11W, except the railroad right of way now located on said premises.

REGISTRAR'S OFFICE } RECEIVED THE 18th of September
 GRAND TRAVERSE CO., MICH } IS 69 AT 10:45 AM
Gerdy Helgink REGISTRAR

3. The SE 1/4 of the SW 1/4 of Section 34, T27N, R11W.

4. That part of the NE 1/4 of the NE 1/4 of Section 34, T27N, R11W, described as follows, to wit: Commencing at the Northwest corner of said NE 1/4 of the NE 1/4, thence South along the 1/8 line of said Section 34, 24 rods, thence East 20 rods, thence North 24 rods to the section line, thence West to the point of beginning.

5. All that part of the N 1/2 of the SE 1/4 of Section 34, T27N, R11W lying N'ly and W'ly of the most S'ly and E'ly line of the backwater of the present dam located on the NW 1/4 of the NE 1/4 of said Section 34, T27N, R11W.

6. The E 1/2 of the SW 1/4 of the NE 1/4 of Section 27, T27N, R11W.

7. The E 1/2 of the SW 1/4 of the SE 1/4 of Section 27, T27N, R11W and the NW 1/4 of the SE 1/4 of Section 27, T27N, R11W, except a parcel of land described as commencing on the North and South 1/4 line of Section 27 at a point 825 feet North of the Southwest corner of the NW 1/4 of the SE 1/4 of said section; running thence East parallel with the East and West 1/4 line 250 feet; thence North parallel with the North and South 1/4 line 100 feet; thence West 250 feet to the North and South 1/4 line; thence South along said 1/4 line 100 feet to the place of beginning.

8. A strip of land 8 rods wide off the South end of the W 1/2 of the SW 1/4 of the NE 1/4 of Section 27, T27N, R11W.

9. The NE 1/4 of the NW 1/4 of Section 3, T26N, R11W.

10. The N 1/2 of the SE 1/4 of the NW 1/4 of Section 3, T26N, R11W, except the railroad right of way of Traverse City Railway Company, now located on said tract.

11. That part of the NW 1/4 of the NE 1/4 of Section 3, T26N, R11W, lying West of the railroad right of way of Traverse City Railroad Company.

12. That part of the SW 1/4 of the NE 1/4 of Section 3, T26N, R11W, lying West of the railroad right of way of Traverse City Railroad Company.

13. A parcel of land consisting of 3.59 acres described as follows: Beginning at the Southwest corner of the NE 1/4 of the NE 1/4 of Section 34, T27N, R11W, running thence North on the West line of the NE 1/4 of the NE 1/4 of said section a distance of 948.1 feet to a point 396 feet South of the North line of said Section 34; thence East 330 feet; thence SW'ly in a straight line to the place of beginning.

14. All that part of the E 1/2 of the SW 1/4 of the NE 1/4 of Section 34, T27N, R11W, lying N'ly of the most S'ly line of the backwater of present dam located on the NW 1/4 of the NE 1/4 of Section 34, T27N, R11W.

15. All that part of the SE 1/4 of the NW 1/4 and of the NE 1/4 of the SW 1/4 of Section 34, T27N, R11W, lying E'ly of the Pere Marquette Railroad right of way.

Also conveying the right to overflow, submerge, saturate, percolate and wash away the following described lands:

16. The E 1/2 of the SE 1/4 of Section 27, T27N, R11W.

17. All that part of the SW 1/4 of the NE 1/4 of Section 34, T27N, R11W, lying S'ly and E'ly of the most S'ly and E'ly line of the backwater of the dam now situated on the Boardman River in the NW 1/4 of the NE 1/4 of Section 34, T27N, R11W; excepting therefrom the right to overflow with water by a dam located in the N 1/2 of the NE 1/4 of Section 34, T27N, R11W in excess of 42 feet in height on land described as follows: Beginning at a point on the East and West 1/4 line of Section 34, T27N, R11W, at a point S 89° 23' 37" W measured along said 1/4 line 1216.82 feet from the East 1/4 corner of said Section 34, which point is also on the center line of a public County road known as Keystone Road; running thence S 89° 23' 37" W along the East and West 1/4 line of said section 749.63 feet to the SE corner of the W 1/2 of the SW 1/4 of the NE 1/4 of said section; thence N 01° 14' 03" W, 524.45 feet;

thence N 77° 19' 18" W, 2.03 feet; thence S 85° 24' 47" W, 123.58 feet; thence S 21° 54' 15" E, 89.89 feet; thence S 06° 03' 50" E, 178.69 feet; thence S 34° 10' 35" W, 189.22 feet; thence S 58° 44' 52" W, 192.83 feet to a point on the East and West 1/4 line of said section; thence S 64° 54' 00" W, 122.34 feet; thence S 25° 48' 40" W, 128.14 feet; thence N 87° 49' 37" E, 210.85 feet; thence S 64° 59' 43" E, 94.56 feet; thence S 36° 13' 50" E, 122.36 feet; thence S 03° 52' 45" W, 126.52 feet; thence S 27° 27' 57" E, 105.59 feet; thence S 18° 55' 30" W, 118.19 feet; thence S 53° 20' 20" W, 136.55 feet; thence S 24° 03' 00" E, 99.32 feet; thence S 24° 34' 00" W, 408.78 feet; thence N 86° 52' 40" W, 151.49 feet; thence S 36° 58' 08" W, 139.99 feet to the North and South 1/4 line of said section; thence South along said North and South 1/4 line 50.39 feet to the South line of the N 1/2 of the SE 1/4, thence N 89° 10' 20" E, 932.43 feet to the center line of Keystone Road, so-called; thence N 18° 26' 32" E along the center line of said road 1396.60 feet to the place of beginning.

18. All that part of the SE 1/4 of the NW 1/4, and all that part of the NE 1/4 of the SW 1/4 of Section 34, T27N, R11W, lying West of the Pere Marquette Railroad right of way.

19. All that part of the N 1/2 of the SE 1/4 of Section 34 lying S'ly and E'ly of the most S'ly and E'ly line of the backwater of the dam now situated on the Boardman River in the NW 1/4 of the NE 1/4 of Section 34, T27N, R11W.

20. All that part of the S 1/2 of the SE 1/4 of Section 34, lying West of the G.R.&I. Railroad, now the Pennsylvania Railroad right of way, all in T27N, R11W.

21. All the rights and easements of flowage conveyed by Fred Eggli, Jr. and Anna Eggli, his wife, to Michigan Public Service Company dated September 12, 1931, affecting the SE 1/4 of the SE 1/4 of Section 22, T27N, R11W.

22. All the rights and easements of flowage conveyed by Erwin J. Gould and Leta Gould, his wife, and Edwin I. Cross, a single man, to Michigan Public Service Company, by a deed dated August 28, 1931, affecting land described as: The NE 1/4 of the NE 1/4 of Section 27, and the SE 1/4 of the NE 1/4 of Section 27, all in T27N, R11W.

23. All the rights and easements of flowage conveyed by Fred Eggli, Jr. and Anna Eggli, his wife, to Boardman River Electric Light and Power Company dated May 19, 1925, and recorded in the Grand Traverse County Register's Office May 20, 1925, in Liber 111, page 249, affecting land described as: Beginning 433.5 feet South of the Northwest corner of the SE 1/4 of the NE 1/4 of Section 34, T27N, R11W, (Township of Garfield,

LEER 306 PAGE 897

Grand Traverse County, Michigan) at an iron stake; thence running in a SE'y direction 83.5 feet parallel with the center line of a dry wash or gulch; thence SW'y touching the SE extremity of said gulch 43.5 feet; thence NW'y parallel to said center line of said wash or gulch 83.5 feet to an iron stake on the East 1/8 line of said Section 34; thence North along said 1/8 line 43.5 feet to place of beginning. The above description is intended to describe a dry wash, gulch or ditch setting back into said SE 1/4 of NE 1/4 of Section 34, which is 43.5 feet wide on the West line of said described land and which extends into said description in a SE'y direction 83.5 feet.

Also conveying all water power developed by Boardman Dam and Sabin Dam and all easements and rights now owned and held by first party to overflow, percolate, saturate, wash away or in any way affect the land upstream or downstream along and adjoining the Boardman River acquired either by grant, prescription or otherwise, which are appurtenant to the operation of said dams.

Also conveying and transferring all of the right, title and interest of first party in the rights and privileges to construct and maintain a dam across the Boardman River in the NW 1/4 of the NE 1/4 of Section 34, T27N, R11W as granted by the Board of Supervisors of Grand Traverse County to the Boardman River Electric Light & Power Co. on April 13, 1894, and all of the right, title and interest of first party in the rights and privileges to construct and maintain a dam across the Boardman River at a point opposite the North end of the NW 1/4 of the SE 1/4 of Section 27, T27N, R11W, as granted by the Board of Supervisors of Grand Traverse County to the Boardman River Electric Light & Power Co. on January 6, 1905, together with any and all other permits which may have been granted by any governmental authority for the purpose of constructing, operating and maintaining Boardman Dam and Sabin Dam.

Also conveying the dam, spill gates, flume, powerhouse and other buildings, turbine gates and controls, and all other equipment used or usable in connection therewith at, on or about the premises known as the Boardman Dam located in the NE 1/4 of Section 34, T27N, R11W, excepting and reserving, however, to first party, all electric generating equipment, generators and exciters, the switchboard, switches and indoor bus structure, the step-up transformer designated as Number 1 by first party, the outdoor substation structure, the station battery and charger, the station power bank, both turbine runners, the electric line providing an alternate source of station power from first party's substation, and the remote alarm devices from first party's substation, together with the right to remove same for a period of nine (9) months from and after the date of this instrument.

Also conveying the dam, spill gates, powerhouse and other buildings, turbine gates and controls, and all other equipment used or usable in connection therewith at, on or about the premises known as the Sabin Dam located in the E 1/2 of Section 27, T27N, R11W, excepting and reserving, however, to first party all

electric generating equipment, generators and exciters, turbines, governors and governor oil pumps, the switchboard, switches and indoor bus structure, step-up transformers, the outdoor substation structure, station battery and charger, station power bank, and three 2' 6" x 10' wood lift gates on said dam, together with the right to remove same for a period of nine (9) months from and after the date of this instrument.

Excepting and reserving to first party its successors and assigns Forever, the easement and right to erect, lay and maintain lines consisting of towers, poles, wires, cables conduits and other fixtures and appurtenances for the purpose of transmitting and distributing electricity and/or conducting a communication business on, over, under and across the premises herein conveyed including all public highways upon or adjacent to said parcels of land. The route to be taken by said lines of towers, poles, wires, cables and conduits on, over, under and across said land being more specifically described as follows:

One line of poles, wires, cables and conduits to run on a route as now located and constructed, the center line of said route being described as follows: To find the place of beginning of said center line, commence at the E 1/4 post of Section 34, T27N, R11W; thence N 89° 38' 15" W along the East and West 1/4 line of said section 1216.82 feet to the center line of Keystone Road; thence N 19° 25' 40" E along the center line of Keystone Road 1679.47 feet to the center line of Cass Road; thence N 77° 01' 20" W along the center line of Cass Road 542.92 feet; thence S 19° 26' 40" W, 391.49 feet; thence S 00° 14' 20" E, 41.07 feet to the place of beginning of said center line; running thence S 51° 12' 20" W, 9.57 feet; thence S 01° 25' 50" W, 669.18 feet; thence S 26° 57' 50" W, 3442.21 feet; thence S 36° 05' 50" W to the West 1/8 line of Section 3, T26N, R11W, being the West line of the land herein conveyed.

One line of poles, wires, cables and conduits to run on a route as now located and constructed, the center line of said route being described as follows: To find the place of beginning of said center line, commence at the E 1/4 post of Section 34, T27N, R11W; thence N 89° 38' 15" W along the East and West 1/4 line of said section 1216.82 feet to the center line of Keystone Road; thence N 19° 25' 40" E along the center line of Keystone Road 1259.47 feet; thence N 86° 59' 00" W, 336.35 feet to the place of beginning of said center line; running thence S 07° 24' 30" W, 383.28 feet; thence S 22° 30' 10" W, 2713.89 feet; thence S 36° 53' 10" W, 2541.85 feet; thence S 17° 02' 00" W, 794.00 feet; to the place of ending.

One line of poles, wires, cables and conduits to run on a route as now located and constructed, the center line of said route being described as follows: To find the place of beginning of said center line, commence at the E 1/4 post of Section 34, T27N, R11W; thence N 89° 38' 15" W along the East and West 1/4 line of said section 1216.82

feet to the center line of Keystone Road; thence N 19° 25' 40" E along the center line of Keystone Road; 1679.47 feet to the center line of Cass Road; thence N 77° 01' 20" W along the center line of Cass Road 505.49 feet to the place of beginning of said center line; running thence N 19° 40' 40" W, 435.12 feet; thence N 24° 00' 40" W, 966.85 feet; thence N 08° 26' 40" W, 2074.63 feet; thence N 03° 20' 30" E, 222.81 feet; thence N 30° 46' 30" E, 1559.93 feet; thence N 01° 31' 00" E to the North 1/8 line of Section 27, T27N, R11W, being the North line of the land herein conveyed.

One line of poles, wires, cables and conduits to run on a route as now located and constructed, the center line of said route being described as follows: To find the place of beginning of said center line, commence at the E 1/4 post of Section 34, T27N, R11W; thence E 89° 38' 15" W along the East and West 1/4 line of said section 1216.82 feet to the center line of Keystone Road; thence N 19° 25' 40" E along the center line of Keystone Road 1679.47 feet to the center line of Cass Road; thence N 77° 01' 20" W along the center line of Cass Road 542.92 feet; thence S 19° 26' 40" W, 69.36 feet to the place of beginning of said center line; running thence N 64° 40' 00" W, 170.92 feet; thence N 51° 04' 05" W, 170.53 feet; thence N 46° 29' 55" W, 265.92 feet; thence N 55° 00' 25" W, 1051.12 feet to the place of ending.

One line of poles, wires, cables and conduits to run on a route as now located and constructed, the center line of said route being described as follows: To find the place of beginning of said center line, commence at the E 1/4 post of Section 27, T27N, R11W; thence N 87° 44' 50" W along the East and West 1/4 line of said section 1663.02 feet; thence S 02° 15' 10" W, 68.52 feet to the place of beginning of said center line; running thence N 88° 51' 10" W, 368.00 feet; thence N 79° 51' 10" W, 603.40 feet to the place of ending.

One line of towers or poles, wires, cables and conduits to run over and across the land herein conveyed in the N 1/2 of the NE 1/4 of Section 34, T27N, R11W, on a route described as in an E'ly and W'ly direction S'ly of and not more than 150 feet distant from the center line of that part of Cass Road which runs in an E'ly and W'ly direction over and across said land and said center line extended in a W'ly direction at the point where said Cass Road turns N'ly near the North and South 1/4 line of said Section 34.

With full right and authority to first party, its successors, licensees, lessees or assigns and its and their agents and employees to enter at all times upon said land for the purpose of patrolling, constructing, repairing, removing, replacing, improving, enlarging and maintaining such wires, cables, conduits, towers and poles and other supports with all necessary braces,

guys, anchors, manholes and transformers and stringing thereon and supporting and suspending therefrom lines of wires, cables or other conductors for the transmission of electrical energy and/or communication and to trim, remove, destroy or otherwise control any trees and brush which may, in the opinion of first party, interfere or threaten to interfere with or be hazardous to the construction, operation and maintenance of said lines. It is understood that no buildings or other structures will be placed under or over said facilities or within such proximity thereto as to interfere with the construction, operation or maintenance of said facilities. It is further understood that nonuse or a limited use of these easements by first party shall not prevent first party from later making use of the easements to the full extent herein reserved.

Also excepting and reserving to first party, its successors and assigns, Forever, the easement and right to maintain all existing electric distribution lines consisting of poles, wires, cables, conduits and other fixtures and appurtenances for purposes of distributing electricity and/or conducting a communication business on any of the lands herein conveyed, which rights have not hereinbefore been specifically reserved, together with the right to repair, remove, replace, improve and enlarge such poles, wires, cables and conduits.

Also saving, excepting and reserving to first party, its successors and assigns, Forever, all nonmetallic minerals, coal, oil and gas (but not including sand, clay or gravel) lying and being on, within, or under the land herein conveyed, with full and free liberty and power to the said first party, and to its successors and assigns, lessees, agents and workmen, and all other persons by its or their authority or permission, whether already given or hereafter to be given at any time, and from time to time, to take all usual, necessary or convenient means for exploring, mining, working, piping, getting, laying up, storing, dressing, making merchantable, and taking away the said coal, oil and gas and other nonmetallic minerals and for storing, re-storing and protecting oil, gas and nonmetallic minerals in the subsurface strata underlying said land and taking and retaking the same, together with the right to lay pipelines under said premises from wells, mines, or shafts sunk upon said lands for the purpose of removing the oil, gas or other nonmetallic minerals from the premises or storing, re-storing and protecting oil, gas or other nonmetallic minerals in the subsurface strata underlying said land and retaking the same.

Second party, by the acceptance of this deed, accepts and assumes all of the duties, obligations and conditions arising out of the ownership of the lands, dams, dam permits, flowage rights, and water power rights appurtenant to said lands and dams, whether such duties, obligations and conditions are express or implied or created by common law, statute or other governmental regulations.

Together with all and singular the hereditaments and appurtenances thereunto belonging or in anywise appertaining; TO HAVE AND TO HOLD the said above-described premises unto the said party of the second part, its successors and assigns, to the sole and only proper use, benefit and behoof of the said party of the second part, its successors and assigns, Forever.

IN WITNESS WHEREOF, the said party of the first part has caused these presents to be signed by its _____ Vice President and its corporate seal hereunto affixed and attested by its _____ Secretary as of the day _____ at _____ as first above written.

Signed, Sealed and Delivered
in the Presence of

W. L. Reid
W. L. Reid

CONSUMERS POWER COMPANY

By R. C. Youngdahl
R. C. Youngdahl
Vice President

Attest:

R. M. Griswold
R. M. Griswold
Secretary

APPROVED AS TO FORM
[Signature]
CONSUMERS POWER COMPANY
LEGAL DEPARTMENT

Willoween R. Smith
Willoween R. Smith

STATE OF MICHIGAN)
) SS.
COUNTY OF JACKSON)

On this 15th day of September, 1969, before me, a Notary Public in and for said County, personally appeared R. C. Youngdahl, to me personally known, who being by me duly sworn, did say that he is Vice President of Consumers Power Company, the corporation named in and which executed the within instrument, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors; and said R. C. Youngdahl acknowledged said instrument to be the free act and deed of said corporation.

Willoween R. Smith
Willoween R. Smith
Notary Public, Jackson County, Michigan
My Commission Expires Sept. 7, 1970

This instrument is exempt under Section 5(A) of C.L. 207.505.

Appendix 4
A Floristic and Natural Features Inventory of the
Grand Traverse Natural Education Reserve

Appendix 5
A Floristic and Natural Features Inventory of the Grand Traverse Nature Education Reserve
Property (Northern Section), Garfield Township, Grand Traverse County, Michigan

Appendix 6
By-Laws for the Advisory Committee

**By-Laws of the Grand Traverse County
Natural Education Reserve
Advisory Committee**

Article I.

NAME AND DESIGNATION

The name of the Committee shall be the Grand Traverse Natural Education Reserve Advisory Committee. (The Committee) The Committee shall make recommendations on the City and County property dedicated as a Natural Education Reserve by the Board of Commissioners by Resolution No. 3-74 and on surrounding passive recreational parklands.

Article II.

PURPOSE

The purpose of the Committee is to advise the County Parks and Recreation Commission on the ecological and recreational management of the Natural Education Reserve and surrounding passive recreation parkland and corridors.

Article III.

MEMBERSHIP

All appointments are three-year terms expiring the first Monday in October with 1/3 of memberships staggered for each year. Members shall be appointed by the Grand Traverse County Board of Commissioners following recommendations from the Parks and Recreation Commission.

The Committee shall consist of members representing Grand Traverse County, the City of Traverse City, Garfield Charter Township and the community at large and shall include:

1. One member of the County Parks and Recreation Commission.
2. One member nominated by the City manager.
3. One member nominated by the Garfield Township Supervisor.
4. Six members representing the community at large.

Article IV.

MEETINGS

Section 1. Meetings will be held monthly or as deemed necessary by the Committee.

Section 2. Five or more of the membership shall constitute a quorum.

Section 3. If a quorum of members is not present, no official business of the Advisory Committee shall be conducted until such a time when a quorum is present.

Article V.
OFFICERS

Section 1. The officers of this Committee shall consist of the Chairman and Vice Chairman.

Section 2. The Chairman shall be the Chief Executive Officer of the Committee and shall perform all acts and duties required of the office, including presiding at all meetings of the members.

Section 3. The Vice Chairman, in the absence of the Chairman, shall have the power and authority to perform all the functions and duties of the Chairman.

Section 4. Any office vacancy may be filled for the balance of the term by a majority vote of the Committee as a whole.

Section 5. Members, including officers, shall serve without compensation.

Article VI.
COMMITTEES

The Chairman may establish standing committees, as he/she deems necessary.

Article VII.
DECISION MAKING

Business of the Committee shall be governed by Robert's Rules of Order.

Article VIII.
AMENDMENTS

These by-laws may be altered, supplemented, amended, or repealed at any meeting of the members at which a quorum is present; provided that notice of such amendment is provided in the meeting notice sent to members.

Appendix 7 Rules

Grand Traverse County Parks and Recreation Commission Rules

The following rules are promulgated by the Grand Traverse County Parks and Recreation Commission by authority conferred on the Commission by Act 261 of the Public Acts of the State of Michigan of 1965, MCL § 46.364, as amended, for the protection, regulation and control of its facilities and areas, and with the approval of the Grand Traverse County Board of Commissioners.

Section 1. Definitions.

- (a) "Commission" shall mean the Grand Traverse County Parks and Recreation Commission.
 - (b) "County Park Property" shall mean all lands, waters and property administered by or under the jurisdiction of the Grand Traverse County Parks and Recreation Commission.
 - (c) "Director" shall mean the Grand Traverse County Parks and Recreation Director.
 - (d) "Person" or "persons" shall mean individuals, firms, corporations, or any group or gathering of individuals.
 - (e) "Camping" means the overnight lodging or sleeping of a person or persons in a tent, trailer-coach, vehicle camper, motor vehicle, or in any other conveyance erected, parked or placed on the premises.
- Section 2. Unlawful acts generally. On lands owned or under the control of the department, it is unlawful for a person or persons to do any of the following:

- (1) To enter, use, or occupy County Park Property for any purpose when they are posted against entry, use, or occupancy, as ordered by the commission.
- (2) To dispose of refuse, rubbish, trash, or garbage not resulting from the use of county-owned lands in receptacles provided on Commission property.
- (3) To ignite any fire except within fireplaces, receptacles or open spaces designated and approved for such purposes by the Commission.
- (4) To place or burn garbage within a designated fireplace, receptacle or open space designated and approved for the building of fires by the Commission, or bury refuse, rubbish, trash, or garbage, regardless of its origin.
- (5) To cause a noise disturbance, which is defined as sound created by human activity with or without the use of any device, which by reason of its volume, intensity, location, or time of day impairs the health, welfare, or peace of another person of normal human sensibilities. The following acts and activities are declared to be noise disturbances and are prohibited. This enumeration shall not be deemed exclusive.
 - (a) The playing of any radio, television, phonograph, other sound reproduction device, or musical instrument in such a manner or at such a volume as to be sufficiently audible to annoy or disturb the quiet, comfort, or repose of persons in the vicinity.

(b) The keeping of any animal or bird which, by causing frequent or long continued noise, shall disturb the comfort and repose of any person in the vicinity.

(c) The use of any motor vehicle, in such a manner as to create a disturbing noise, including, but not limited to, the screeching of tires and the discharge into the open air of exhaust from the engine without a sufficient muffler.

(d) Shouting or other raucous or boisterous behavior for an unreasonable length of time.

(e) The use of a loudspeaker, public address system without a permit issued by the Director.

(6) To place or erect a fence or barrier, to construct or occupy improvements, or to enclose the lands or obstruct the passage of another person or persons in any way from entering, exiting or using County Park Property.

(7) To peddle or systematically solicit business of any nature; distribute or post any handbills or other advertising matter or post signs without permission from the Director.

(8) To paint or otherwise mark any tree or rock on any lands, waters, structures, or property without permission from the Director.

(9) To park vehicles of any type in areas posted as no parking; or, where designated parking areas exist, to park vehicles of any type in an area other than the designated parking area. If a motor vehicle is found parked on County Park Property, then the license plate displayed on the motor vehicle shall constitute prima facie evidence that the person who parked it there is the owner of the vehicle.

(10) To camp on County Park Property unless approved and designated for such purposes by the Commission and with an approved permit issued by the Commission.

(11) To store or leave property on county lands for more than 24 hours without written permission of the Director. This subdivision does not apply to lawfully occupied, designated camping sites when camping with a permit authorized by the Commission.

(12) To ride or lead a horse, pack animal, or other riding animal, or any animal driven vehicle on any area, except on roads that are open to the use of motor vehicles, trails, bridle paths, and campgrounds designated for such use by the Commission.

(13) To possess a dog without a leash or on a leash greater than six-foot in length except upon County Park Property open to hunting.

(14) To enter or remain on County Park Property between the hours of 11:00 pm and 6:00 am unless the property is open for events between these hours.

(15) To possess a firearm, bow and arrow, crossbow, trap or other instrument used for hunting or trapping of animals; or to hunt or trap on any County Park Property unless that property is open to hunting and/or trapping by Rule of the Commission.

(16) To possess, consume, or offer for sale alcoholic beverages except in locations approved for such by the parks and recreation commission.

(17) To refuse to comply with the above rules upon the demand of an authorized local enforcement officer; or to interfere with the officer's enforcement of the ordinance; or to retaliate against another who has made complaint of a violation of a park rule; or to interfere with an employee or agent of the Grand Traverse County Parks and Recreation Department while performing his or her official duties.

Section 3. Enforcement Officers. The Grand Traverse County Sheriff and his deputies are authorized as local enforcement officers of this ordinance.

Section 4. Fines and Imprisonment. Any person violating any provision of the foregoing rules shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined not more than \$100 and costs of prosecution, or imprisoned in the Grand Traverse County Jail for a period not exceeding 90 days or both, for each offense.

Section 5. Compliance With Other Laws. Nothing in this ordinance impairs or precludes a separate cause of action provided by statute or common law for conduct prohibited herein.

Section 6. Severability. The provisions of this ordinance are severable and if any part is declared void or unenforceable by a court of competent jurisdiction, the remaining parts shall remain in force.

Appendix 8
Schedule A- District's Scope of Services

SCHEDULE A
DISTRICT'S SCOPE OF SERVICES

GRAND TRAVERSE COUNTY

1. The District shall provide resource management services to the County. The services shall consist of:
 - (a) Implement the County Park's Master Plan as it relates to the County's quiet recreation parklands, with primary emphasis on the Grand Traverse Natural Education Reserve.
 - (b) In conjunction with the Natural Education Reserve Advisory Committee; develop and implement an annual work plan for the Reserve. The work plan will be submitted to the County Parks and Recreation Commission annually. Projects identified in the work plan are dependent on funds provided by the County.
 - (c) Develop an inspection and maintenance schedule for the Natural Education Reserve and coordinate routine maintenance of existing structures and trails.
 - (d) Provide management services for the exposed bottomlands of Boardman Pond to allow for reasonable and safe public access to the Pond and bottomlands. Other than routine debris removal, sign replacement, etc., the Grand Traverse County Administrator will determine what actions will be taken to provide reasonable and safe public access.
 - (e) Develop, at minimum, one grant proposal for funding a specific project selected by the Natural Education Reserve Advisory Committee.
 - (f) Obtain permits needed for the above activities.
 - (g) Regularly monitor the public's activities within the Natural Education Reserve.
 - (h) Coordinate with local agencies to secure adequate labor for selected projects.
 - (i) Coordinate work project management with adjacent landowners, townships, and other entities (e.g. Michigan Department of Environmental Quality, Michigan Department of Transportation, Grand Traverse Road Commission, Trout Unlimited, Michigan Department of Corrections, etc).
2. The District shall provide administrative and clerical support necessary to accomplish the above tasks.

3. The District shall coordinate, to the maximum possible extent, the acquisition of materials and the use of labor with other active projects on County-owned lands.
4. The District shall regularly attend County Parks and Recreation Commission meetings to provide verbal reports of progress.
5. District staff will communicate with Facilities Management and Parks and Recreation staff regularly to discuss progress and future projects.
6. The District shall provide a final report and recommendations for program continuation to the County Board prior to November 30, 2010.
7. The District will not be responsible for any activities listed above that are not accomplished due to inability to obtain permits, or to lack of funding, labor availability, or other factors beyond the District's control.

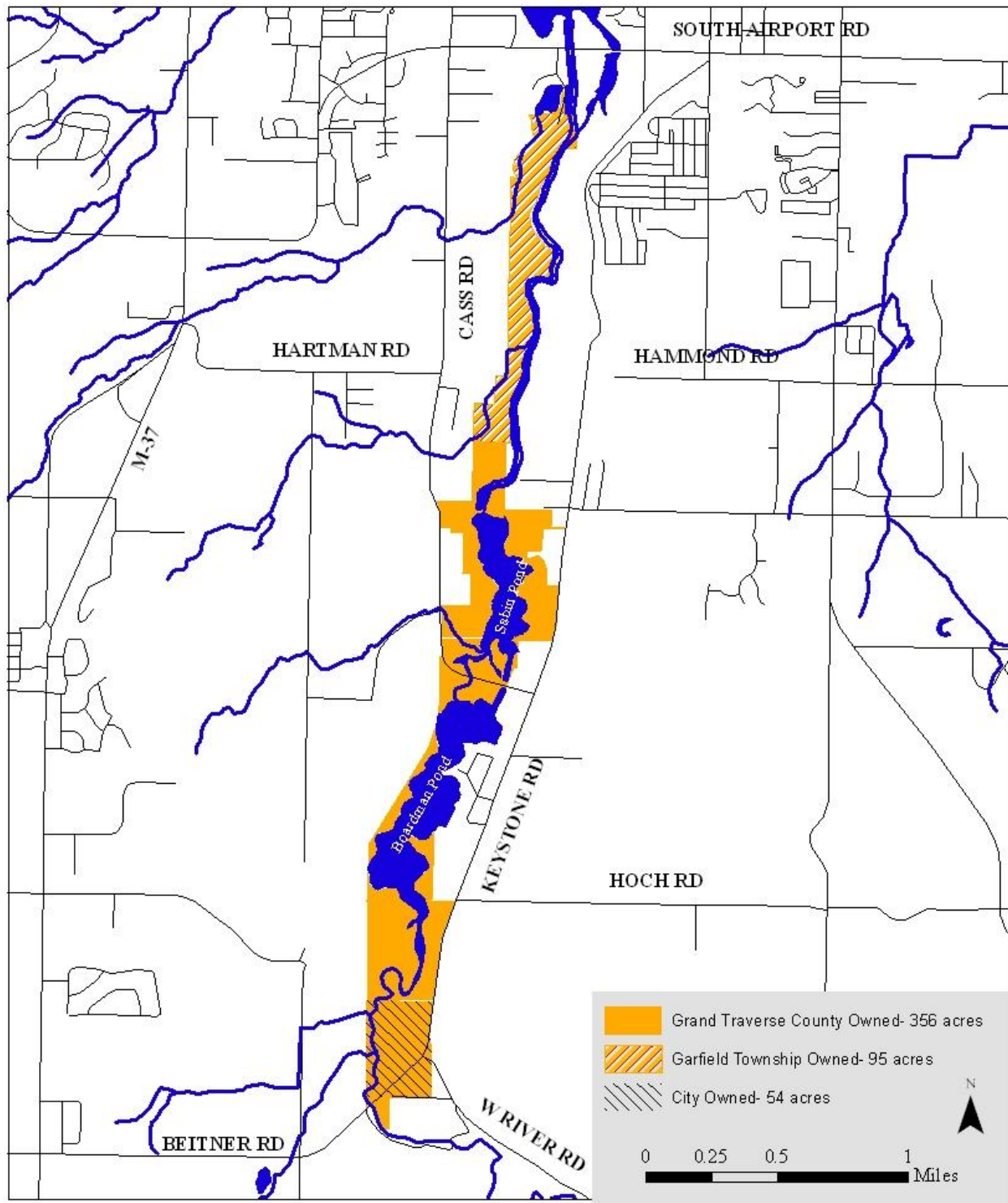


Figure 1. Natural Education Reserve Property Boundaries

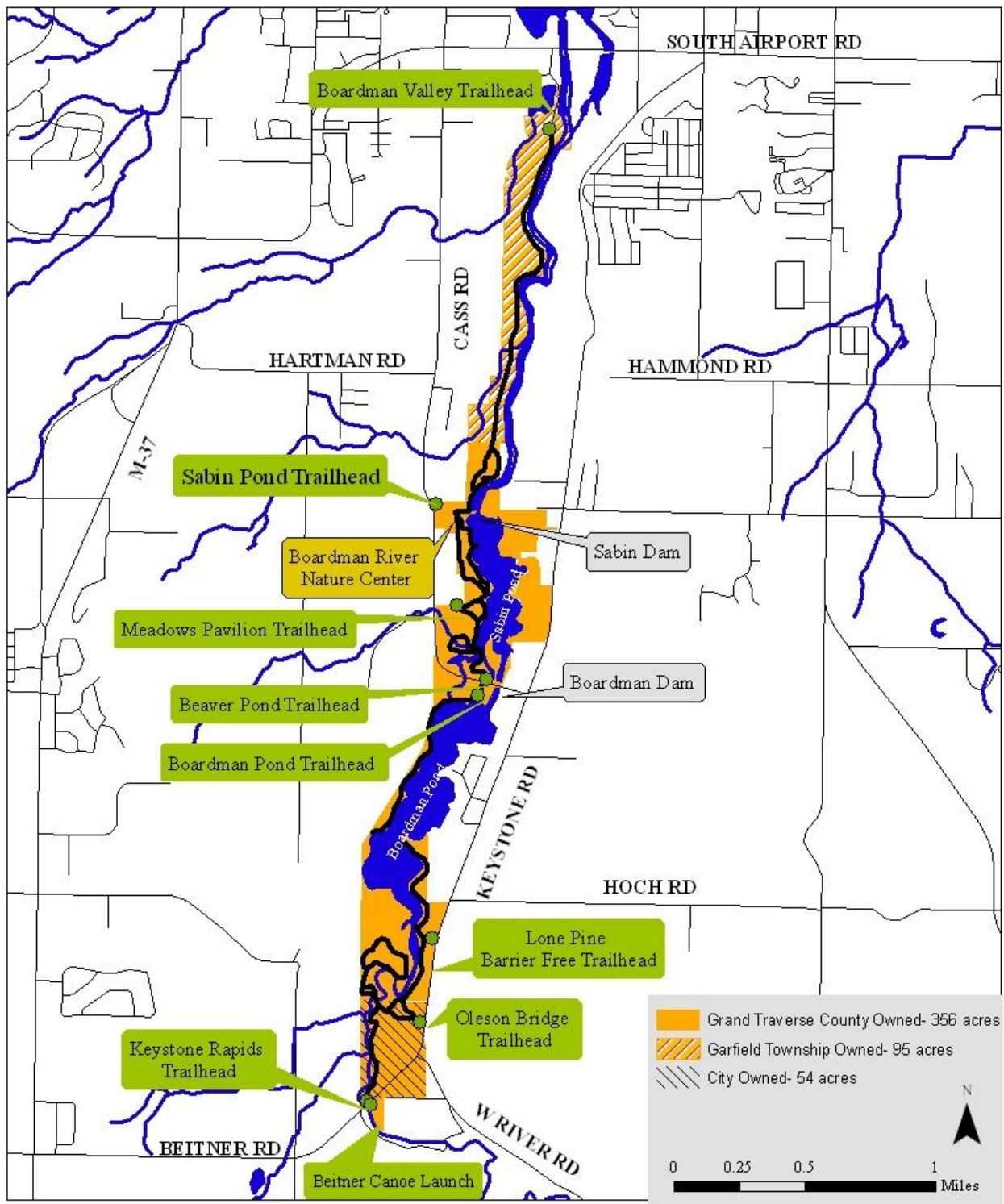


Figure 2. Natural Education Reserve Trailheads and Trails

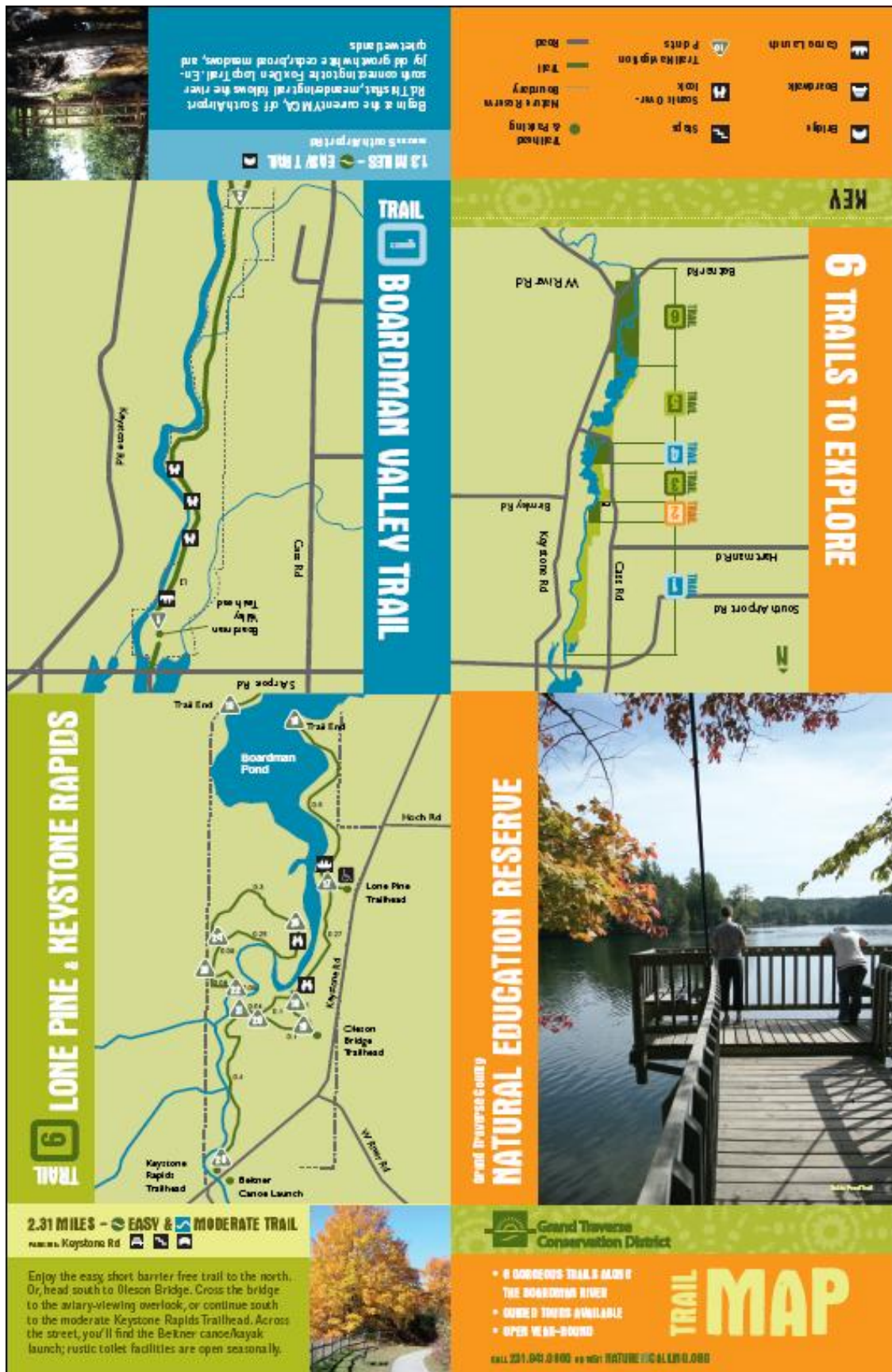
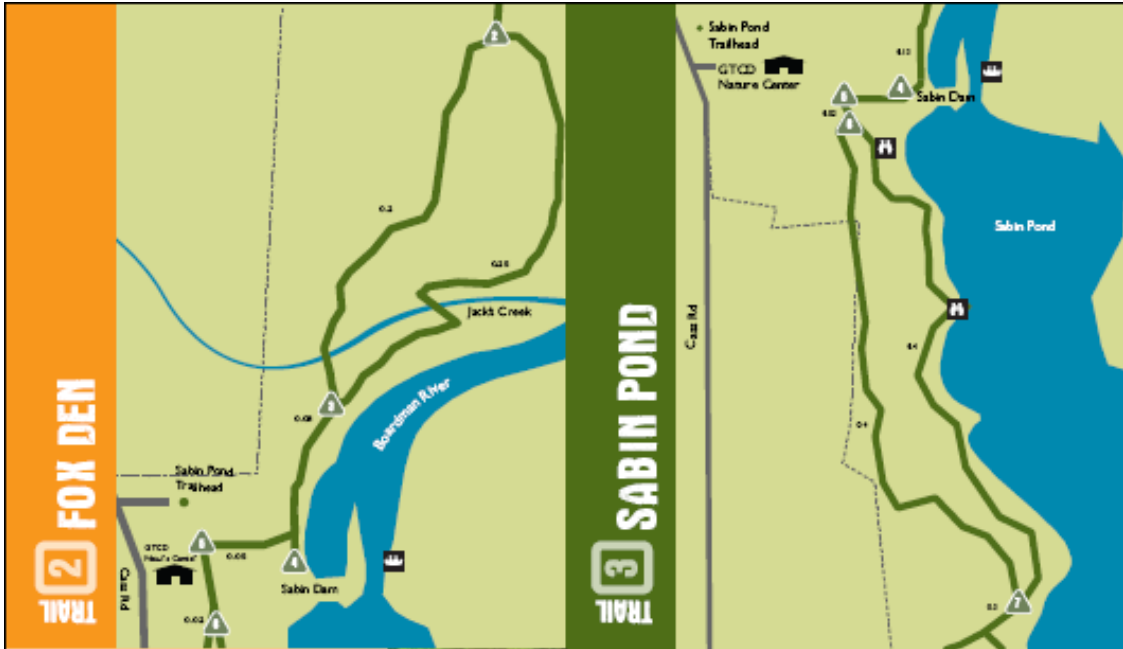


Figure 3. Tri-fold map brochure



2 FOX DEN TRAIL

0.6 MILES - EASY TRAIL

Starts at GTCD's Boardman River Nature Center, Cass Rd

This loop trail starts at the GTCD's Boardman River Nature Center and crosses a rustic footbridge over Jack's Creek. From there, a 900' boardwalk traverses sensitive wetlands and past fruit trees planted by early settlers.



3 SABIN POND TRAIL

0.8 MILES - MODERATE TRAIL

Starts at GTCD's Boardman River Nature Center, Cass Rd

From the Nature Center, head south to view the pond on a suspended overlook. Continue south along a 500' boardwalk. Notice the changing vegetation as you head back to the Nature Center through northern hardwood forests and red and white pine stands.



4 BEAVER POND TRAIL

0.7 MILES - MODERATE TRAIL

Starts at Boardman Dam, Cass Rd

From Cass Road, at the one lane bridge, head north through a beech/maple forest to a 900' boardwalk; look for the active beaver lodge! Head west to loop trail or continue North to the meadows picnic pavilion.



5 BOARDMAN POND TRAIL

0.75 MILES - EASY TRAIL

Starts at Boardman Dam, Cass Rd

From Cass Road, at the one lane bridge, head south. This "out and back" trail follows the edge of Boardman Pond through shady forests. Enjoy the unique habitat provided by the pond and the forest edge.

