

**CITY OF KALAMAZOO
WATER PUMPING STATION 24**

Al Sabo Land Preserve

**5999 S. 9th Street
Texas Township, Michigan**

Information Sheet

**Prepared by the City of Kalamazoo
Department of Public Services
Water Division**

March, 1998

WATER PUMPING STATION 24 (ATWATER)
Al Sabo Land Preserve
5999 S. 9th Street, Texas Township, Michigan

History

- December, 1961, completion of exploratory hydrogeologic investigation project by Jones, Henry & Williams, Toledo, Ohio, reported in “Kalamazoo, Michigan Ground Water Development in the Atwater Valley, Texas Township.”
- Between 1964 and 1969, 717.5 acres of property were purchased by the City of Kalamazoo, primarily for the preservation, protection, and use for water supply purposes.
- August and September, 1971, completion of aquifer testing by the Ohio Drilling Company, Massillon, Ohio, reported in “Report on the Aquifer Test of Atwater Well Field Kalamazoo, Michigan.”
- The City Ordinance No. 957, enacted on November 1, 1972, to protect the water supply, control the land uses, and protect the environment of the City-owned land preserve. Allowed land uses in designated areas include: hiking, jogging, biking, and cross-country skiing.
- In 1973, completion of construction of Water Pumping Station and 18 production wells, and activation of facility.
- October, 1974, completion of “Evaluation of Long Term Ground Water Supply of the Metropolitan Kalamazoo Area” by the Ohio Drilling Company.
- In the 1990's, several of the production wells were replaced due to low efficiencies and cost-benefit of maintenance.

Water Pumping Station 24 and Wellfield Characteristics

- Serves the Super High Pressure Water Service District, one of seven current service districts, and our western-most district.
- In 1997, Water Pumping Station 24 supplied ~78 percent of water in the Super High Pressure Water Service District and ~13 percent of the total water system.
- The screened interval of the wells range from 170 to 360 feet below ground level, and static water levels range from ~15-30 feet below ground level, with variable pumping levels.
- Average daily pumpage in 1997 = 2.79 million gallons per day (MGD); Total pumpage in 1997 = 1.02 billion gallons.
- Wellfield maximum pumping capacity = ~ 9,250 gallons per minute (g.p.m.) (13.32 million gallons per day); 15 wells at 550 g.p.m. and one at 1,000 g.p.m.
- Water Pumping Station booster pumping capacities = 2 @ 4,200 g.p.m., 1 @ 4,800 g.p.m., and 1 @ 2,800 g.p.m.
- The United States Geological Survey and the City of Kalamazoo have a cooperative water level monitoring program, which includes three observation wells at the Water Pumping Station 24 wellfield.

Aquifer Characteristics

- Aquifer is a leaky artesian (semi-confined), with 15 wells screened in lower aquifer, and one well in upper aquifer. Aquifer thickness is variable but ~100 feet in lower and ~50 feet in upper.
- In the lower aquifer, transmissivity = ~260,000 gpd/ft; storativity = ~0.0063 (6.3×10^{-3}); aquitard $K = \sim 9.66$ g.p.d./ft²; safe capacity = ~5 MGD (1.83 BGY) to 8 MGD (2.92 BGY) with underflow and expanded cone. The upper aquifer has a transmissivity of ~160,000 gpd/ft. Cone of depression at a continuous 5 MGD pumpage = ~5,000 feet.

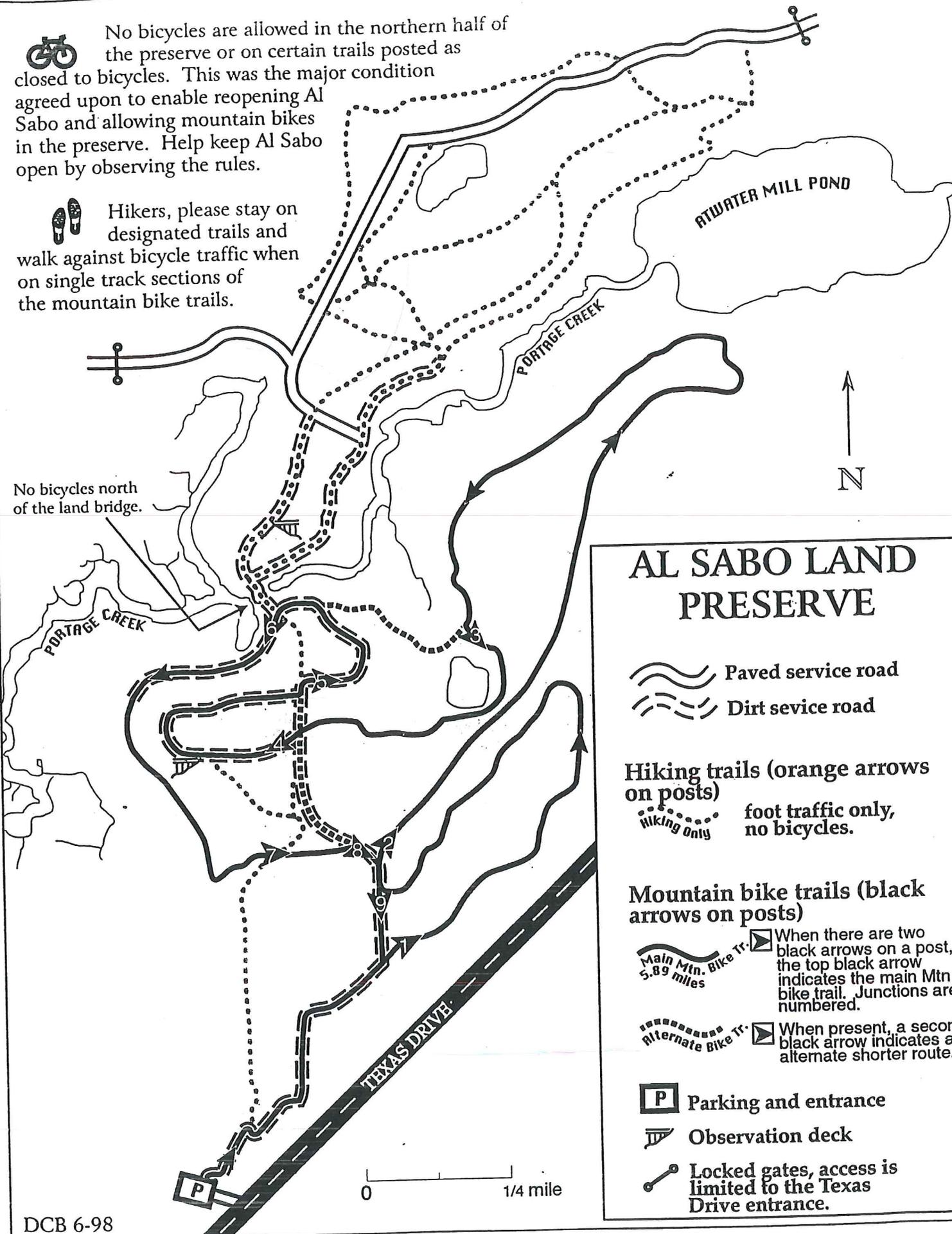


No bicycles are allowed in the northern half of the preserve or on certain trails posted as closed to bicycles. This was the major condition agreed upon to enable reopening Al Sabo and allowing mountain bikes in the preserve. Help keep Al Sabo open by observing the rules.



Hikers, please stay on designated trails and walk against bicycle traffic when on single track sections of the mountain bike trails.

No bicycles north of the land bridge.



AL SABO LAND PRESERVE

- Paved service road
- Dirt service road

Hiking trails (orange arrows on posts)

- Hiking Only
- foot traffic only, no bicycles.

Mountain bike trails (black arrows on posts)

- Main Mtn. Bike Tr. 5.89 miles
- When there are two black arrows on a post, the top black arrow indicates the main Mtn bike trail. Junctions are numbered.

- Alternate Bike Tr.
- When present, a second black arrow indicates an alternate shorter route.

- Parking and entrance

- Observation deck

- Locked gates, access is limited to the Texas Drive entrance.

The Sabo Preserve

The Sabo Preserve is a 741 acre tract of woods, wetlands and meadows purchased in the late 1960's by the City of Kalamazoo's Utilities Department as a municipal water supply site. The Preserve is named for Albert Sabo, a former director of the City's Utilities Department. It has been set aside by the City of Kalamazoo to protect the water supply environment, and to preserve the land in its natural state for generations to come. The hiking, jogging and cross-country skiing trails have been created for public use by the Utilities Department.

Pat Worrell: A Living Memorial

It is the hope of the Pat Worrell memorial fund founders that in some way Pat's spirit can be kept alive through the continued maintenance of the Al Sabo Preserve.

We feel this is a fitting tribute to a young woman who loved life fully. Pat took the "risk of living with both arms, she embraced her world like a lover and accepted pain as a condition of existence".

Pat loved and cherished her experiences with nature. She made frequent visits to the Sabo Preserve; walking, hiking or cross-country skiing. Taking pictures along the way, she captured the beauty of the preserve, both by camera and in her mind's eye.

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*Beauty lies in future things, a hope,
looking for the morrow. Beauty lies in
anything, One must only look.*

*It is our hope that you will join us in
paying tribute to Pat by enjoying and
respecting the Preserve and its environs.*

The Sierra Club

The Sierra Club was founded in 1892 by writer and naturalist John Muir to protect the magnificent wilderness of the Sierra Nevada Mountains.

Since then the club has grown into a nationwide organization dedicated to the preservation and the enjoyment of the wilderness.

The Sierra Club has been responsible for the establishment of National and State Parks, the wilderness preservation system and the prevention of a dam that would have flooded part of the Grand Canyon National Park.

The local Kalamazoo Valley Group is part of the state's Mackinac Chapter. Our Group keeps abreast of local environmental issues as well as sponsoring regular outings.

The Kalamazoo Valley Group invites you to enjoy the Al Sabo Land Preserve by using the trails we have marked and maintained. We also invite you to seek more information about the Sierra Club by sending a post card to:

Sierra Club
Kalamazoo Valley Group
P.O. Box 3293
Kalamazoo, MI 49003-3293

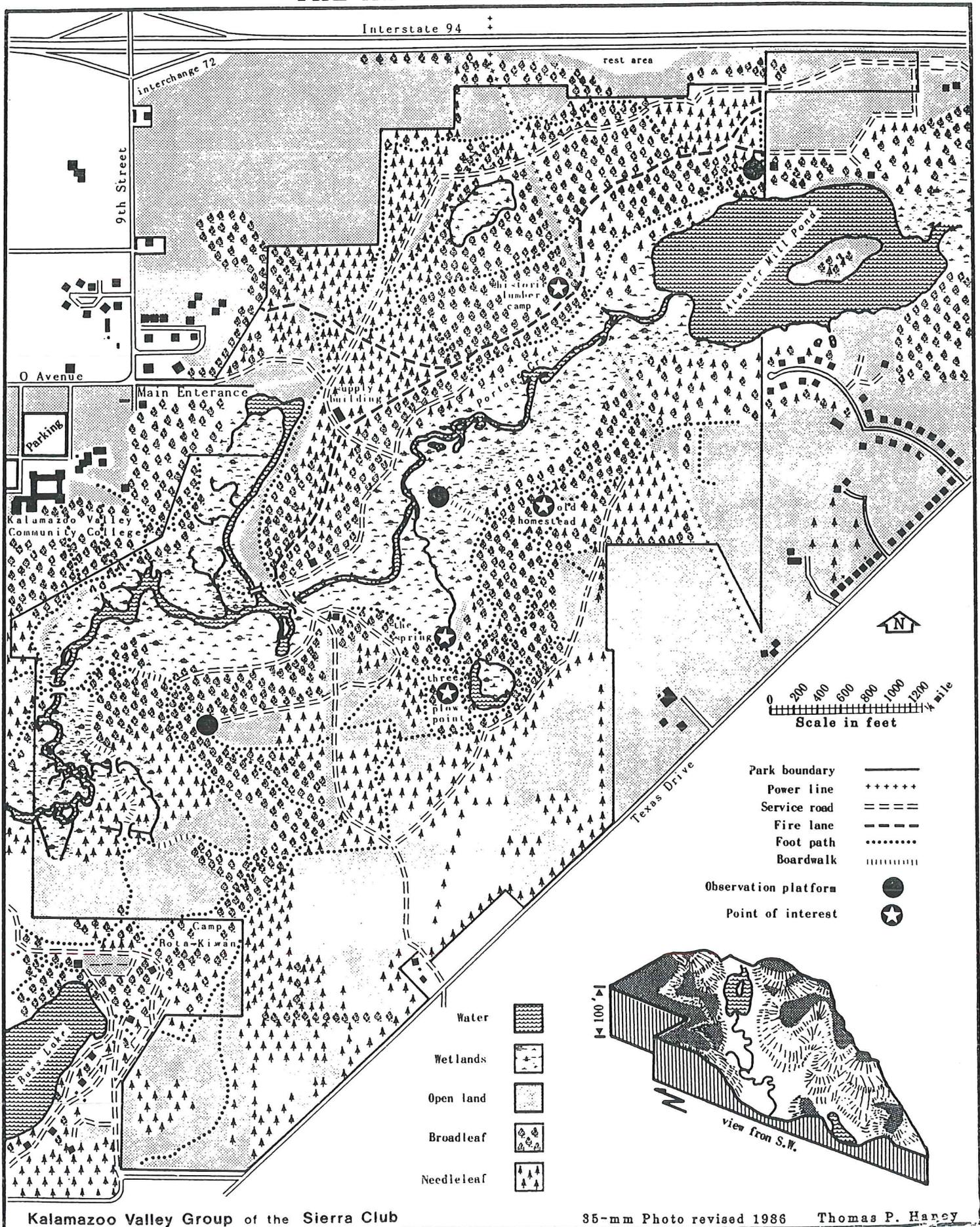
Al Sabo LAND PRESERVE



Pat Worrell Memorial Trails a Kalamazoo Valley Sierra Club Project

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Open during daylight hours

THE AL SABO LAND PRESERVE



§ 38-19. Establishment and protection of water resource and land preserve. [P.S. Code §§ PS407.1, PS407.2]

- A. All that portion of the City-owned land in Sections 1, 2, 11 and 12, T 3S, R 12W, which is south and westerly of a one-hundred-thirty-two-foot electric transmission right-of-way, and which is more than 821.90 feet north of the south line of Section 11, and which is more than 1,000.00 feet northwesterly from Texas Drive, as shown on Exhibit "A" attached to Ordinance No. 957 and on file in the City Clerk's office, shall be established as a water resource and land preserve.
- B. It is the intention of the City to maintain ownership and control of the land referred to above, so as to protect the water supply environment to the greatest degree possible, and to preserve the character of the land in as natural a state as possible, while providing for water supply development needs. Therefore, the land uses permitted in this area shall be limited to those activities necessary for water supply purposes and for passive recreational uses, such as nature study, wildlife observation, hiking and minimal forest management.
- C. All unauthorized motorized vehicles and equipment; hunting, trapping, and the carrying of firearms of any type; and sewers, garbage dumps and other possible sources of contamination shall be prohibited in the area described in Subsection A above. All activities that could affect the land or water environment, which are not specifically approved or prohibited in this section, must receive prior approval from the Director of Utilities.
- D. Land areas owned by the City and contiguous to the land described in Subsection A above may be used for more active recreational uses that are compatible with the intent of this section.