

PAST, CURRENT, and FUTURE USE

Most of Bridgewater was once a glacial lake and as a result today there is a major aquifer running through the center of Bridgewater. Carver's Pond sits over that aquifer. Once a site for an ice house, today it is used as an outdoor classroom for all ages from elementary students to ecology students at Bridgewater State College. It's a popular, heavily used area and is a favorite spot in the community for ice skating, fishing, and canoeing. Bridgewater State College students use the pond as a social gathering place on a regular basis.

Future uses look much the same as current uses. Opportunities for passive recreation such as walking, canoeing, fishing, and skating will continue. New elements could include picnic areas, a section of universally accessible trail, and reorganized parking. Because Carver's Pond is such a popular site, it has potential to be a model for increasing environmental awareness by implementing a series of interpretive signs describing the role of important sensitive areas around Carver's Pond in the town's ecology.

SURROUNDINGS

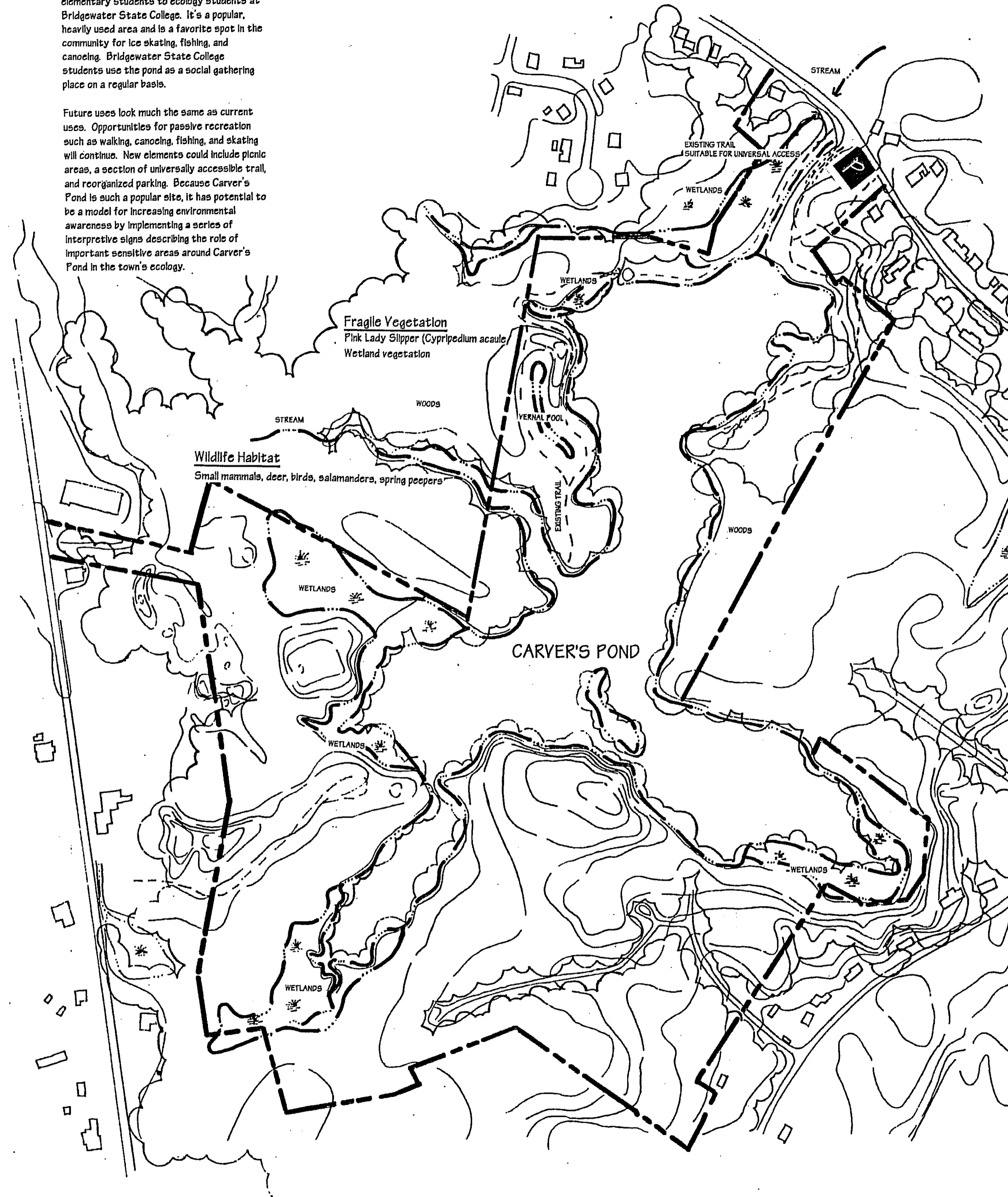
Carver's Pond is 35 acres in size owned by the Water Department. It is located in the center of town near Bridgewater State College in a residential neighborhood within walking distance of downtown. Parking and access to this site is on Summer Street east of Routes 1B & 2B. Residential development surrounds the site to the north, east, and south; some commercial development is along the western edge as well as the Water Department buildings and town wells.

EXISTING NATURAL CONDITIONS

Most of Bridgewater was once a glacial lake and sandy gravel deposits and silty, wet areas are contemporary reminders of Carver's Pond's glacial history. This site has a gentle topography with some steep places across the site; the banks of the pond are short, steep drops except where a wetland meets the pond edge. The Bridgewater aquifer lies beneath Carver's Pond and the many freshwater marshes and wetlands bordering the pond's edge provide a vital and important filter for drinking water pumped from this site.

Vegetation on this site is various due to the changes in growing conditions from wet to dry, and from sunny to shady across the site. The forest is made up of red maple, white pine, beech, and red oak. The forest floor is a mosaic of wetland plants and dry-loving native plants such as Canada mayflower, violets, a variety of ferns, and the endangered orchid, Pink Lady Slipper. There are some patches of invasive vegetation especially in areas which have been or are regularly disturbed, specifically along the trails. The most apparent invasive plants on the site are Japanese Honeysuckle and multiflora rose. Maintenance plans for removal of these shrubs will support native New England vegetation and promote species diversity on this site.

Areas of impounded water and delineated wetlands are protected with a 100 foot wetland buffer zone according to the MA Wetlands Protection Act. Much of this site falls within a buffer zone which prohibits heavy construction or disturbance; trail construction is allowed as a limited project.



ECOLOGICAL CONCERNS and MANAGEMENT SUGGESTIONS

Ecological concerns for this site center around water quality. Protecting the site's sizable wetlands is a major step toward protecting water quality because the wetlands provide the critical function of filtering and cleaning surface water that percolates to the aquifer. For this reason, limiting access to the large wetland areas in the south and southeastern portions of the site is advisable to control the possibility of accidental contamination of the water in the marshes. If trails are to be established through these marshes, boardwalks must be constructed to protect the vital function these wetlands play in maintaining the drinking water quality in Bridgewater.

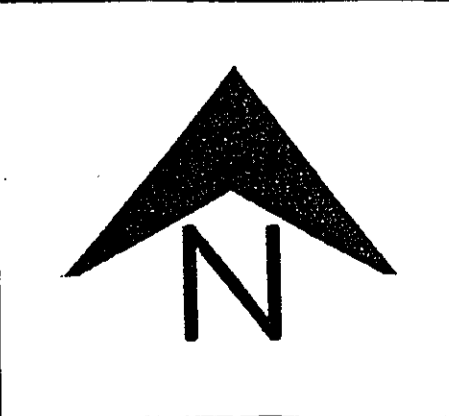
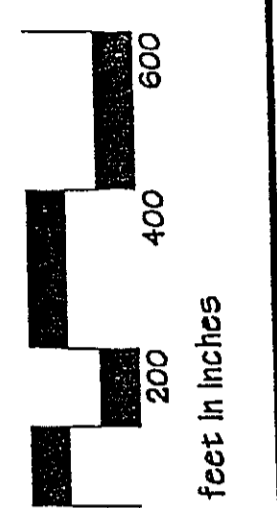
This site has some invasive exotic plant species such as Japanese honeysuckle, multiflora rose, and Norway maple. These species are not a nuisance today, however, their invasive characteristics will crowd out other native New England plants on this site. As an example of encouraging a healthy ecosystem, remove the invasive exotic plants so that native vegetation can thrive.

SUMMARY

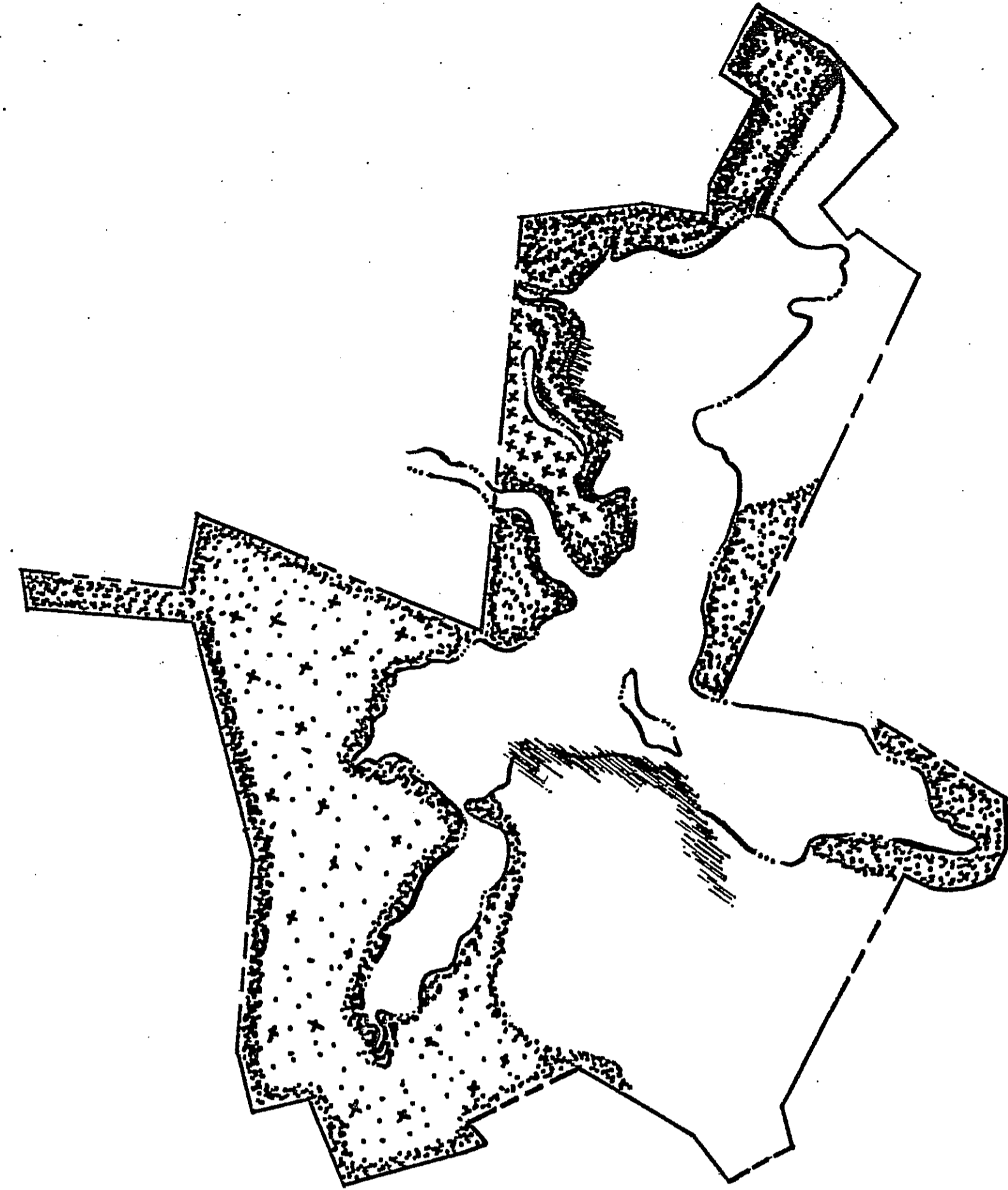
Carver's Pond is 35 acres in size owned by the Bridgewater Water Department. It is located in the center of town near Bridgewater State College in a residential neighborhood within walking distance of downtown. Because most of Bridgewater was once a glacial lake, today there is a major aquifer running through the center of Bridgewater; Carver's Pond sits over that aquifer. Sandy gravel deposits and silty, wet areas are contemporary reminders of Carver's Pond's glacial history. This site has a gentle topography with some steep places across the site; the banks of the pond are short, steep drops except where a wetland meets the pond edge. Ecological concerns for this site center around water quality. Protecting the site's sizable wetlands is a major step toward protecting water quality because the wetlands provide the critical function of filtering and cleaning surface water that percolates to the aquifer.

Conceptual design prepared for the
NATURAL RESOURCES TRUST OF BRIDGEWATER
with grant funding from the
BOSTON FOUNDATION
Fund for Preservation of Wildlife & Natural Places

EXISTING CONDITIONS - CARVER'S POND
BRIDGEWATER CONSERVATION SYSTEM
Bridgewater, Massachusetts
corway school of landscape design · june 1999
chagnon, leal & darrow



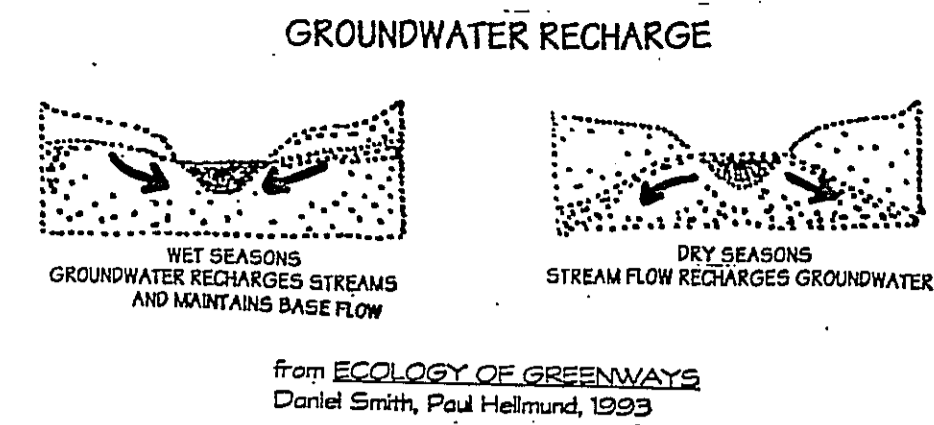
ZONES APPROPRIATE FOR USE



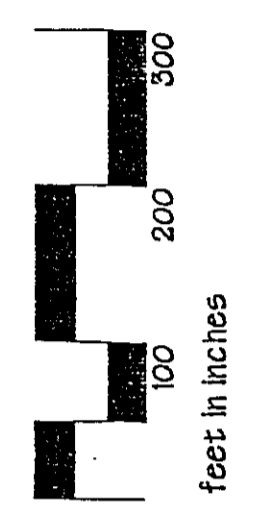
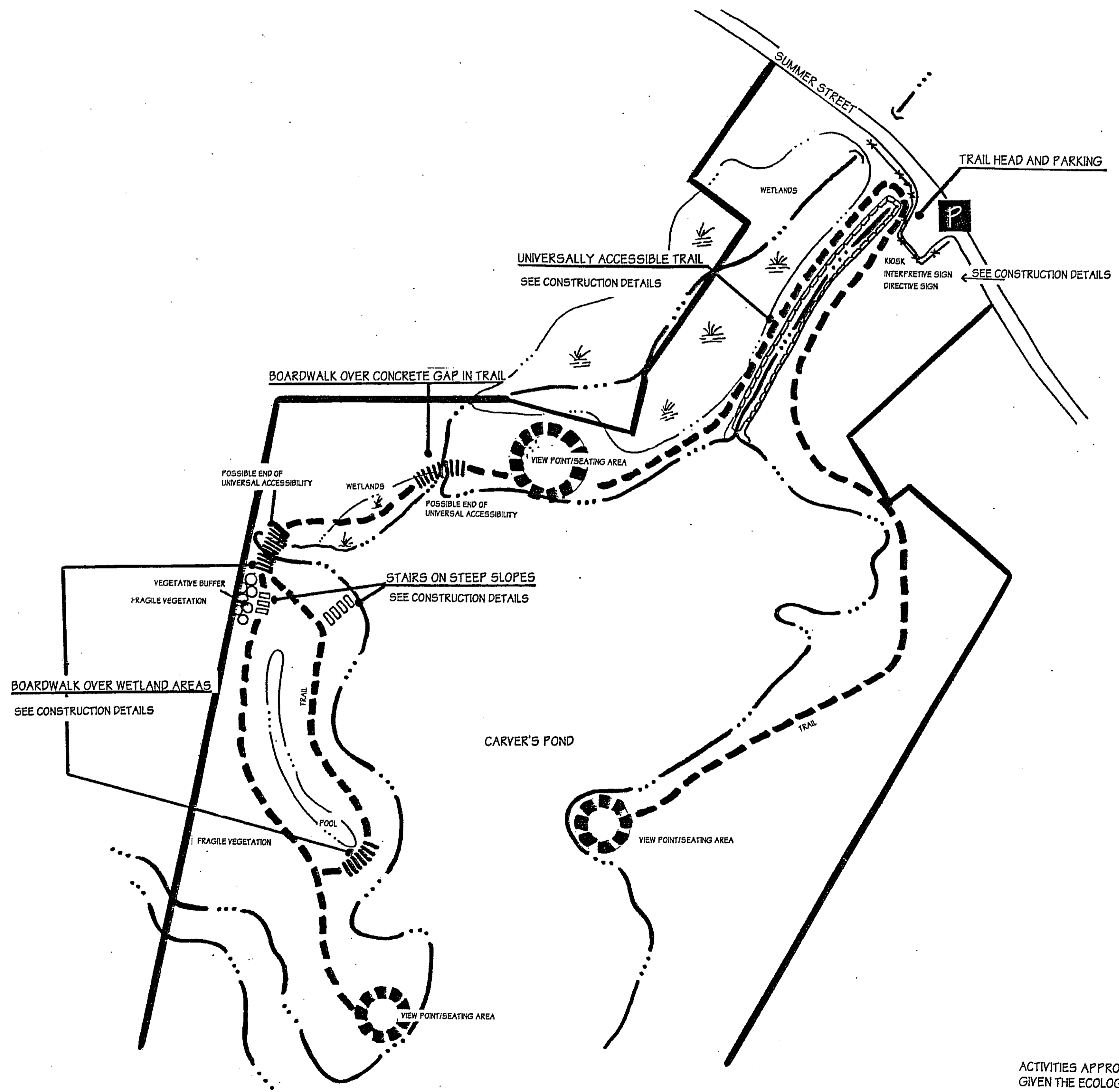
Wet: limits use whenever possible
 Steep: limits use whenever possible
 Fragile habitat: limit use whenever possible
 Safety hazard: limit use whenever possible
 Zone suitable for use (see notes for appropriate activities on this site)

CONSTRUCTION DETAILS

	REPEATABLE DETAILS USED		
	Resource Protection	Visitor Access	Visitor Education
Canoe Put-In/Pull-Out			
Designated Destination	*	*	*
Designated Entrance	*	*	*
Parking	*	*	*
Boardwalk	*	*	*
Bollards			
Designated Trail	*	*	*
Directive Signs	*	*	*
Interpretive Signs	*	*	*
Kiosk	*	*	*
Railings/Fencing			
River Dock			
Specified Trail Material	*	*	
Stairs	*	*	
Vegetative Buffers	*	*	*

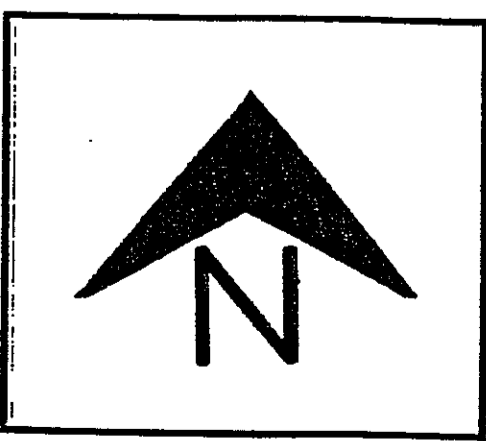


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NATURAL RESOURCES TRUST OF BRIDGEWATER
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 for the restoration of Wetlands & Natural Areas

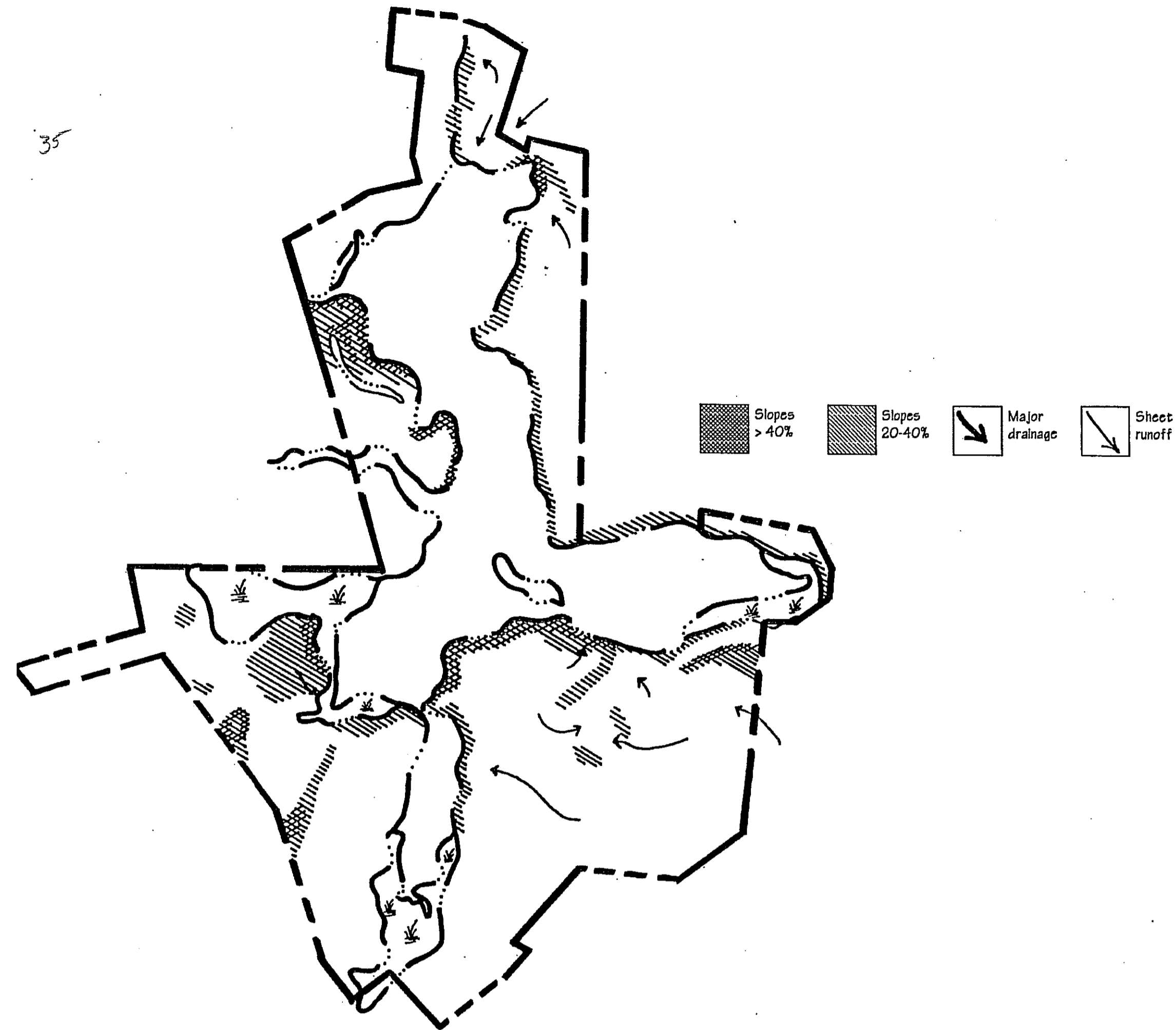


CONCEPTUAL DESIGN - CARVER'S POND
BRIDGEWATER CONSERVATION SYSTEM
 Bridgewater, Massachusetts
 Conway School of Landscape Design
 Chagnon, Leal & Darrow June 1999

- ACTIVITIES APPROPRIATE ON THIS SITE GIVEN THE ECOLOGICAL CONDITIONS
- WALKING, HIKING
 - NATURE OBSERVATION
 - PICNICKING
 - CANOE PUT-IN/PULL-OUT
 - MOUNTAIN BIKING
 - CAMPING
 - FISHING
 - HORSEBACK RIDING
 - CROSS-COUNTRY SKIING



SLOPE & DRAINAGE ANALYSIS



SLOPE CONSIDERATIONS

The Carver's Pond site is fairly flat. A narrow strip of slopes 20-40% borders portions of the pond; in some sections the slope of the pond bank gives way to marsh. The banks with slopes of 40% or more are mostly along the south central portion of the pond. The vernal pool on the west side of Carver's Pond is flanked by steep slopes to the north; these are slopes of 40% or more and should be avoided to help maintain the health of the pool.

DRAINAGE CONSIDERATIONS

Two-thirds of Carver's Pond is wetland therefore water is retained in swamps and filtered slowly down to the aquifer below the site. In drier places, the water drains evenly across the site directly into Carver's Pond. Steep slopes north of the vernal pool help direct water to the pool. Depressions to the north and southeast of Carver's Pond are very wet and should be avoided.

POND BANK CONSIDERATIONS

Most of the banks at Carver's Pond have been eroded over time by the motion of the water; Windsor soils are the only highly erodible soils on this site. In several cases, the wet areas are at the pond edge so the pond bank disappears into the swamps on the site.

TRAIL CONSIDERATIONS

Hinkley and Windsor soils are suitable for trails on this site. Fresh water marshes and peat section are not suitable for trails without boardwalks as they are wet, fragile, and important resources for maintaining water quality. Steep slopes above the vernal pool are Hinkley soils which hold a very steep slope (15-35%); erosion exacerbated by hikers on the ridge of the slope north of the pool can degrade the quality of the vernal pool below.

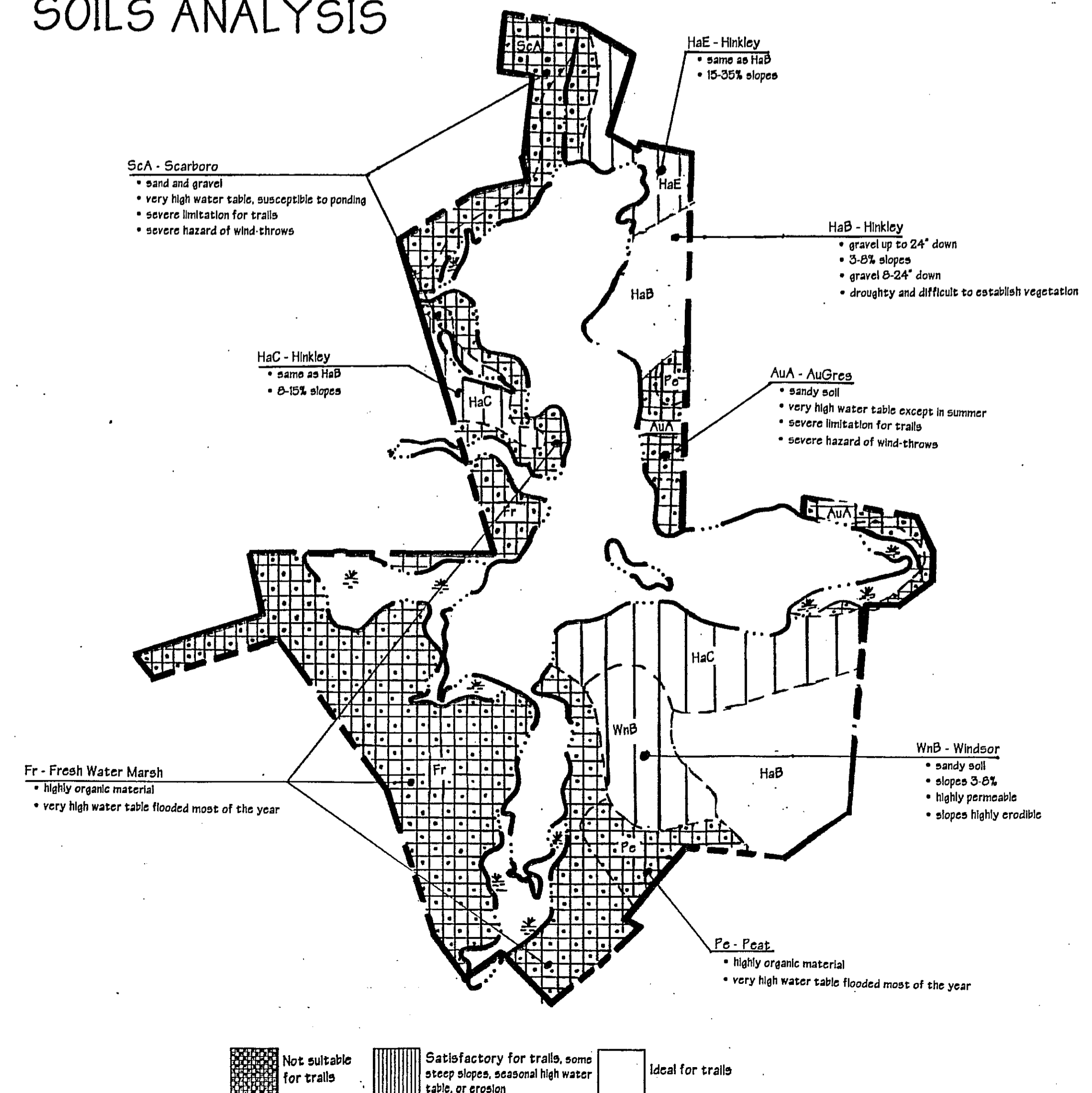
SUMMARY

Carver's Pond was once a lake bed, so it's fairly flat and the soils are approximately one-third gravel and two-thirds wetland. The wells for Bridgewater's drinking water pump water from the aquifer below Carver's Pond. Over half of the site is surveyed as a fresh water marsh; these areas are flooded most of the year and are composed of highly organic material which serves as a critical filter to clean the water which percolates to the aquifer.

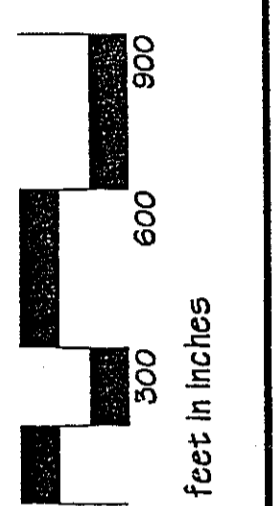
DESIGN DIRECTIVES

Wetland areas are extremely valuable as a living filter for the town's water supply, therefore they are best left undisturbed. For this reason, always use boardwalks to traverse wetland areas and limit boardwalk trails to edges of wetlands to keep the wetlands clean. Eliminate the "loop" trail across the ridge of steep slopes north of the vernal pool to prevent additional erosion into vernal pool from hikers.

SOILS ANALYSIS



Conceptual design prepared for the
NATURAL RESOURCES TRUST OF BRIDGEWATER BOSTON
 with grant funding from the
FOUNDATION FOR PRESERVATION OF WILDLIFE & NATURAL AREAS



ANALYSIS - CARVER'S POND
BRIDGEWATER CONSERVATION SYSTEM
 Bridgewater, Massachusetts

conway school of landscape design
 chagnon, leal & darrow
 june 1999

