

BARNSTABLE COUNTY ASSEMBLY OF DELEGATES

In the Year Two-Thousand

Ordinance 00-04

A proposed ordinance to create a Sandwich Three Ponds District of Critical Planning Concern.

Barnstable County hereby ordains:

1.0 General

As authorized by Sections 10 and 11 of the Cape Cod Commission Act the Sandwich Three Ponds area, as hereinafter described, is hereby designated as a District of Critical Planning Concern ("District" or "DCPC"). The purposes of this District shall be to enhance protection of water quality within existing and potential future zones of contribution to public water supply wells; to enhance protection of water quality within Scorton Harbor/Creek and the Three Bay coastal embayments; to evaluate and protect potential well areas to serve future town needs; to protect the water quality of Lawrence, Spectacle and Triangle Ponds; to maintain the scenic character of area roads and views of pond shores and woodlands; to preserve cultural landscapes, archaeological sites, historic structures and traditional land uses within the District; to protect the District's key natural resources including rare plant and wildlife habitat, wetlands and coastal plain pond shores, vernal pools, unfragmented forested areas, fisheries, and wildlife corridors; to encourage the continued use of land within the District for open space and recreational purposes including summer camps; to enhance recreational opportunities within the District that are compatible with resource protection and to ensure appropriate management and uses of existing recreational facilities; to foster land uses that are compatible with the resource protection goals of the District and to manage growth in a manner that will not result in adverse impacts on the town's infrastructure; and to encourage the development of a management plan to address nonregulatory issues and foster education about the sensitive resources within the District.

2.0 Background

On April 9, 1999, the Cape Cod Commission received a proposed nomination for the Sandwich Three Ponds District of Critical Planning Concern from the Sandwich Board of Selectmen pursuant to Section 10(d) of the Cape Cod Commission Act. The Commission voted to accept the nomination for consideration on May 20, 1999. A subcommittee of the Commission conducted public hearings on July 13, 1999 and August 10, 1999 at the Sandwich Human Services Building to take testimony regarding the District nomination. The Commission voted on July 15, 1999 to extend by 60 days the review period for the District. The town of Sandwich also conducted a public meeting for landowners within the proposed District on August 2, 1999 to answer questions and discuss landowners' future plans for their property. A number of people commented on the District and the minutes of that meeting have been included as part of the public record for this process. Commission staff met several times with the town of Sandwich's DCPC Committee to discuss the nomination and significant resources in the area. The subcommittee met to discuss a draft decision on August 9, 1999 and August 16, 1999. A hearing was held before the full Cape Cod Commission on August 26.

Testimony and/or written letters in support of the proposed designation were received from the following: Sandwich Board of Selectmen, Sandwich Planning Board, Sandwich Conservation Commission, Sandwich Board of Health, Sandwich Board of Assessors, Sandwich Local Planning Committee, Sandwich Water District, Association for the Preservation of Cape Cod, The Compact of Cape Cod Conservation Trusts, Sandwich Conservation Trust, Lakewood Hills Property Owners Association, Lakefield Farms Homeowners Association, Camp Cotuit Homeowners, Sandwich Pond Watch, Frederic and Nora Bartek, Bruce Rosinoff, Susan Walker, Roger Riefler, Jan Teehan, Scott Spangler, Don Harper, Bob Uebele, Bill Lafferty, Ann Arata, Cheryl Stapleton, Priscilla Fields, Responsible Environmental Protection for Sandwich, Tim Schmonsees, Donald Tucker, Lois Tucker, and Lynne MacDonald.

Testimony and/or letters of concern or opposition were received from the following: John Higgins, Paul Donoghue, Cape Cod YMCA (represented by Allen Larson, John Holland, and Craig Rockwood), and South Shore YMCA (represented by Sterling Wall, Mark Dickinson, D.J. MacKinnon, Atty. Myer Singer, Atty. Warren Baker, Ralph Yohe, and Bruce Netherwood).

The following individuals provided additional testimony or comments: Carolyn Crowell, Susan James, Sue Hart, Kathy Vaughn, Norine R. DiNardi, Rob Weimar, Eva Cohen, Nancy Kummer, Fred Busher, Frank Barrett, Bill Burbank, Barbara Burbank, Mark Ventre, Barry Neal, Norman Barry, Jeffrey Barnaby, Norman Seifel, and John Burke.

After consideration of the nomination, both written and oral testimony, information submitted for the record, and a site visit to the nominated area, the subcommittee voted unanimously (3-0) on August 16, 1999 to recommend that the Commission approve the nomination, forwarding it to the Assembly of Delegates for designation as a District of Critical Planning Concern pursuant to the Cape Cod Commission Act and the District of Critical Planning Concern regulations. The subcommittee also recommended approval of a decision regarding:

- The reasons for designation;
- A description of the area's critical concern to the region;
- The problems of uncontrolled or inappropriate development in the area;
- The advantages of controlled development in the area
- Guidelines for development related to identified concerns; and
- A written description and map of the boundaries of the area.

On August 26, 1999, the full Commission voted unanimously to transmit this decision to the Barnstable County Assembly of Delegates.

The Assembly of Delegates referred the Proposed Ordinance to the Standing Committee on Governmental Regulations and Natural Resources. The Committees held a public hearing on September 22, 1999. After the public hearing, the Committees voted to recommend approval of the proposed District. The Assembly of Delegates met on October 20, 1999 to vote on the draft Ordinance. After deliberation, the Assembly of Delegates voted to return the Three Ponds DCPC to the Cape Cod Commission for restudy and redrafting. In their report returning the proposed designation, the Assembly of Delegates requested:

- That the Town of Sandwich reopen serious negotiations with the major landowners and try to resolve their difficulties regarding future land use and or acquisition; and
- At the time of resubmission of the proposed ordinance, the Town and landowners show evidence of good faith negotiations.

On December 2, 1999, the Cape Cod Commission met with representatives of the Cape Cod YMCA, the South Shore YMCA, and the Town of Sandwich to receive reports regarding the status of their discussions and negotiations. At the meeting the Cape Cod Commission voted unanimously to return the proposed ordinance to the Assembly accompanied by reports from the town and the major landowners as well as additional letters of support, and with a recommendation that the proposed Three Ponds District receive final approval by the Assembly.

At that meeting the Commission also made the following findings and additional recommendations:

- The Town of Sandwich and the major landowners have worked cooperatively and in good faith throughout the DCPC process and have made substantial progress since October 20, 1999 in their discussions regarding future land uses and land protection within the proposed District, and the DCPC designation is critical to bringing these discussions to a successful conclusion;
- Designation of the Three Ponds DCPC is necessary to address the issues raised in the

- Town's DCPC nomination including land use and recreational management of the area, and there is extensive public and landowner support for this proposed designation;
- The Section 23 Exemption process is available to all landowners who have a need to move forward with development that would otherwise not be permitted during the limited development moratorium. In particular, the Commission encourages such applications for activities relating to improvement of facilities for YMCA camp purposes where such improvements would not otherwise be allowed by the DCPC moratorium and would not derogate from the intent and purposes of the District; and
 - The Town of Sandwich is encouraged to appoint a landowners' Working Group comprised of landowners within the proposed District and other interested parties, including a representative of each of the camps, to work with the Sandwich DCPC Committee on proposed Implementing Regulations for the District."

3.0 Written Description of the Area

The Sandwich Three Ponds District of Critical Planning Concern encompasses approximately 692 acres of land area and approximately 313 acres of pond surface area. The boundaries of the area nominated by the town of Sandwich were shown a map (Attachment A) prepared by the Cape Cod Commission and dated 4/9/99. This area was described by the town as "lots having frontage on Spectacle Pond, Lawrence Pond, or Triangle Pond and any lot that is held in common ownership with contiguous property that has frontage on said ponds as of April 12, 1999. Land held by a corporation or trust shall be deemed to be held in common ownership with contiguous property unless the owner demonstrates to the satisfaction of the town that the land is not in common ownership. In the event of a disagreement between the map and the general description, it is intended that the map shall govern."

After review of this boundary by the subcommittee and staff, a review of testimony and further consultation with the Sandwich DCPC Committee, the subcommittee proposed that the Commission amend the boundary to include the layout of the roadways surrounding the DCPC within the boundary as shown on the attached map prepared by the Cape Cod Commission and dated August 12, 1999 (Attachment B). The purpose of this boundary change is to include these roadways to better enable the town to address protection of scenic vistas and stormwater issues relating to water quality in the ponds. The Sandwich DCPC Committee has reviewed this proposed boundary and concurs with this change. With this boundary modification, the Commission finds that the land and water within the Sandwich Three Ponds District reasonably belong within the District. Land and water within the District form a critical area and the Commission finds that this area needs protection afforded by the Act. The area designated is a logical planning area and is suitable for the adoption of coordinated regulations for the District as a whole. Finally, the Commission finds that the boundaries of the Three Ponds District, as established, are easily identifiable, convenient, recognizable and appropriate given the purposes of the designation.

4.0 Type of District

The Sandwich Three Ponds District described above qualifies under Section 10(a) of the Cape Cod Commission Act for proposed designation as a District due to the following factors:

- a) The presence of significant natural, coastal, scientific, cultural, archeological, historic, economic and recreational resources or values of regional, state-wide or national significance; and
- b) The presence of substantial areas of sensitive ecological conditions which render the area unsuitable for development;

In accordance with the DCPC Guidance Document issued by the Cape Cod Commission in December 1990 and preapplication consultation meetings with Commission staff, the town of

Sandwich identified that the area is eligible for designation for any or all of the following:

- a) Water Resource District
- b) Wildlife, Scenic and Ecological Resource District;
- c) Cultural Resource District;
- d) Growth Management District; and
- e) Open Space and Recreation Resource District.

4.1 Reasons for the District's Designation

When proposing designation of a District, Section 10(j) of the Act requires the Commission to specify why the area is of critical concern to the region, the problems associated with uncontrolled or inappropriate development, and the advantages to be gained by the development of the area in a controlled manner.

Information available to the Cape Cod Commission supported a finding that the proposed Three Ponds Area is of regional importance, that potential problems of uncontrolled or inappropriate development exist within the district, and that there are advantages to be gained by development of the area in a controlled manner. The Commission specifically found that controlled development of land and water within the proposed Three Ponds District is important to the protection of drinking water quality, preservation of an adequate water supply, protection of surface water quality and quantity, the assurance of a safe transportation network, preservation of the area's unique scenery, cultural resources and community character, protection of rare plant and wildlife habitat and significant natural resources, the provision of open space and well-managed recreational opportunities, and the management of growth in a manner that will not result in adverse impacts on the town's infrastructure. The Commission found that there are planning and regulatory tools available which are likely to be effective in protecting or otherwise meeting the objectives of the District and that current regulatory mechanisms are not in place to control growth and development in a manner that would protect the resources within the proposed District. Further information regarding the reasons for designation of the District is provided below.

4.1.1. Water Resources

Land uses within the Three Ponds DCPC area have the potential to impact all of the water resources of concern identified in the Regional Policy Plan (RPP): drinking water wells, coastal embayments, and ponds. The ecosystems of the three ponds within the DCPC boundaries (Triangle, Lawrence and Spectacle Ponds) are subject to a variety of stresses, including the following: nutrients from wastewater, roads and other sources, introduction of non-native plants and animals, and water level fluctuations from nearby public water supply wells. The impacts of these stresses have not been extensively evaluated, but management activities to ensure sustainable functioning of the ecosystems are either fairly well established (e.g. water quality protection) or are being developed (e.g. water level fluctuations).

Water quality in freshwater ponds is generally most susceptible to excessive amounts of phosphorus. Generally phosphorus is added to lakes from the land uses within 300 feet of ponds. As more phosphorus is added to most freshwater systems, it acts as a fertilizer causing more extensive plant growth, usually algae. As these plants die, they sink to the bottom of the pond where their decay via bacterial action causes oxygen in the water to be consumed. Lower oxygen concentrations impair the habitats of colder water fish, like trout, and bottom dwellers, like catfish. In deeper lakes, in which colder waters are separated from warmer surface waters by temperature stratification, oxygen in the deeper, colder waters can be significantly reduced if sediments have excessive decaying plants.

Water quality in the three ponds has not been adequately characterized, but as a result of water quality studies associated with the Massachusetts Military Reservation groundwater studies, some

data has been collected from Triangle Pond. During the summer of 1996, a dissolved oxygen profile of the entire water column was collected in Triangle Pond. This profile indicated that dissolved oxygen concentrations in bottom waters of the pond were 2.5 ppm or approximately 6 ppm less than the surface water concentration; this depressed dissolved oxygen level indicates that this pond is receiving more nutrients than the ecosystem can sustain. Additional study is necessary to establish the potential sources of the nutrients in this pond and the two others, and to evaluate the water quality impacts of additional development within the DCPC boundaries.

Sandwich has established a Surface Water Protection District (SWPD) (section 5100 of Zoning Bylaws) within 300 feet of surface water ponds. This bylaw allows the Zoning Board of Appeals (ZBA) to "withhold approval of a special permit" for construction of new multi-family and commercial structures with any portion of their septic systems within the SWPD if it is determined by the ZBA that the pond is "at or above critical eutrophic levels" or the nutrient contribution is greater than the fair share, on a per acre basis, available to the parcel.

This SWPD bylaw should be reviewed to consider the inclusion of all developments (including single family residences) within 300 feet of surface water ponds and further consideration should be given to the development of a Board of Health regulations requiring a 300 foot setback for all septic system leach fields. Additional regulations should also be considered to ensure that stormwater runoff is directed out of this setback area or treated to remove phosphorus and to ensure that areas with steep slopes have adequate setbacks to prevent phosphorus additions due to erosion of steep banks. The town has already funded a stormwater remediation project at the Lakewood Hills subdivision which will remove a significant direct discharge of stormwater runoff from Spectacle Pond. Other such potential remediation projects should be identified as part of the management plan for the proposed District.

Although the SWPD bylaw established a concentration of 0.02 ppm total phosphorus as the "critical eutrophic level" for all ponds, a determination of whether this concentration has been attained requires water quality monitoring of the ponds. A first order study of Lawrence, Spectacle and Triangle Ponds, including a determination of their watersheds, water quality, shoreline development, stormwater discharges, bathymetry, and seasonal stratification patterns, is necessary to determine whether the bylaw eutrophic level is appropriately protective for individual ponds, including those within the DCPC area.

In addition to the impact of nearby land uses on the water quality of the ponds, the potential impacts of water withdrawals on pond water levels should also be addressed. Water levels in these ponds naturally fluctuate due to year-to-year precipitation differences; the potential for additional reductions in water levels is also introduced by nearby public water supply wells. A U.S. Geological Survey study (Masterson, et al., 1998) of the impact of existing and future water withdrawals has indicated that water recharging the ponds is drawn from land areas between areas recharging public water supply wells; depending on pumping schedules, ponds and wells may be "competing" for the same water. Projected 2020 withdrawals for the wells near the DCPC ponds indicate water level reductions of between 3 and 4 feet for Spectacle and Triangle Ponds and between 2 and 3 feet for Lawrence Pond due to increased withdrawals. Further study is necessary to establish the potential ecosystem impacts of current and future withdrawals and to evaluate potential alternatives to avoid these impacts as well as any impacts from future water supply wells.

Since the ponds and the wells are often drawing water from the same areas, land uses within the DCPC areas should be considered for potential impacts on drinking water quality. Groundwater underlying the District supplies water to both the towns of Sandwich and Barnstable. The relatively undeveloped nature of land within the proposed District contributes to the protection of this water supply. The town currently has wellhead protection regulations consistent with DEP recommendations and RPP requirements, including a 5 ppm nitrogen loading limit and hazardous materials limitations. This bylaw applies to approximately 684 of the 692 acres of land within the

proposed District. Nitrogen loading studies of the wellhead protection areas including the area of the DCPC have projected that buildout densities may cause nitrogen levels to meet or exceed 5 ppm nitrate-nitrogen (Belfit and McCaffery, 1995).

Finally the DCPC area is approximately evenly split between the Scorton Harbor/Creek and Three Bay coastal embayment watersheds. Scorton Harbor/Creek has been classified as the second most nitrogen overloaded system on Cape Cod during the Commission's first order review of the embayment nitrogen loading (CCC, 1995). A tidal flushing study and an accompanying nitrogen sensitivity analysis would be required to develop an identified marine water standard. The Commission has provided FY 99 funds to the town to assist in obtaining some water quality and tidal data for the Scorton Harbor system. A tidal flushing study has been completed for the Three-Bay embayment system and an identified marine standard has been developed for each of the subembayments (Eichner, et al., 1998). The upper portion of the Three Bay system has been identified as being nitrogen overloaded. Under the RPP, developments within these subwatersheds must not add additional nitrogen.

Development of the land within the District in a manner consistent with the Sandwich Zoning Bylaws would likely result in adverse impacts to water resources within the District including groundwater, surface water and marine waters. Town bylaws generally do not contain standards that would provide for protection of these resources.

4.1.2. Natural Resources

The proposed District contains a wealth of important natural resources, in large part due to its size and relatively undeveloped condition. To date, there has not been a comprehensive study of the resources within the proposed District, although some information has been gathered in the course of various research projects and is summarized below.

All three ponds within the proposed District are Coastal Plain Ponds. According to the Association for the Preservation of Cape Cod (1990), these are an extremely important and uncommon habitat that harbors a wide variety of rare plant and invertebrate species. While they are common throughout Cape Cod and southern Plymouth County, they occur in few other places worldwide and are considered globally rare. The ponds are connected to the water table and their water levels rise and fall in response to groundwater fluctuations. As a result, a diverse group of plants have adapted to these changing conditions and flourish between low and high water levels. Since the global distribution of this type of pond is extremely limited, the plants that grow along its margin tend to be correspondingly rare. In general, small ponds and the sheltered coves of large ponds tend to have the greatest species diversity because the shorelines experience little wave erosion. Both development and unmanaged recreational use of the shoreline threaten the habitat's continued viability.

The three coastal plain ponds in the proposed District vary in size and characteristics. Lawrence Pond is the largest pond within the proposed District. The pond is 138 acres in size with an average depth of 15 feet and a maximum depth of 27 feet. According to the Massachusetts Division of Fisheries and Wildlife (DFW) (1993), "transparency is very good, extending to 16 feet, and aquatic vegetation is scarce." Spectacle Pond is 91 acres in size with an average depth of 19 feet and a maximum depth of 43 feet. According to DFW (1999), "transparency is excellent, extending to 22 feet, and submerged aquatic vegetation is common." Triangle Pond is 84 acres in size with an average depth of 15 feet and a maximum depth of 30 feet. Transparency was reported to be 16' in 1948. In addition to the three ponds, there is a small shallow "pondlet" that is part of Spectacle Pond during periods of high water and separated from Spectacle Pond at low water. This pondlet is located at the northwestern lobe of Spectacle Pond. It contains a large amount of aquatic plant growth and provides excellent habitat for turtles and a large variety of bird species.

The 1997-1998 edition of the atlas published the Massachusetts Natural Heritage and Endangered Species Program (NHESP) has identified the three ponds within the proposed District and their shorelines as "Priority Sites of Rare Species and Exemplary Natural Communities." This designation is used in planning for the protection of both upland and wetland habitats for rare plant and animal species. The Association for the Preservation of Cape Cod (APCC) prepared a critical habitats atlas in 1990 which identifies critical resources specific to Cape Cod. Within the proposed district, APCC has identified rare plant species habitat and coastal plain pond shore habitat around all three ponds. In addition, virtually all of the land area within the proposed District has been mapped by the Cape Cod Commission on its Significant Natural Resources Areas map for its multiple natural resource values including rare species habitat, unfragmented forest habitat, and existing and potential water supply protection. This relatively undeveloped land within the District, in conjunction with adjacent protected land, provides important interior wildlife habitat, as well as wildlife migration corridors.

The NHESP has provided additional information documenting the significance of the rare species habitat associated with the ponds. Specifically, a number of rare plant species have been documented along the shorelines of these ponds including the endangered Maryland Meadow Beauty (*Rhexia mariana*) and species of special concern such as Pondshore Knotweed (*Polygonum puritanorum*); Redroot (*Lachnanthes carolinana*); and Terete (Slender) Arrowhead (*Sagittaria teres*). Also, the Comet Darner (*Anas longipes*), a rare damselfly, is found in association with one of the ponds.

The following information about rare species within the proposed district is taken from Natural Heritage Program rare species data sheets. As can be seen, all of the rare plant species associated with the ponds are sensitive to the impacts of development as well as dependent on natural water level fluctuations that characterize the Cape's coastal plain pond shores.

The Comet Darner is the most spectacular dragonfly in Massachusetts. It is nearly the size of a small bird (3-3.5") long, with a 3" wingspan and is brightly colored. Massachusetts is at the northern limit of its range and it is found principally on Cape Cod and in Southeastern Massachusetts near ponds with emergent vegetation along the shoreline. The most substantial threat is destruction of habitat including development in close proximity to the ponds, septic system leakage, artificial drawdown of water from groundwater pumping, recreational use, and aquatic vegetation removal projects.

Pondshore Knotweed is an annual with pink flowers that blooms in mid-July to early October. It is found along the shores of coastal plain ponds and appears when the water level drops. There have been 10 occurrences of this plant documented in Massachusetts since 1978. It is adversely affected by development and recreational uses around ponds.

Maryland Meadow Beauty is a perennial herb with yellow flowers that blooms in late August to October. It inhabits the upper margins of coastal plain pond shores and is dependent on fluctuating water levels. It is considered "endangered" in Massachusetts with only five occurrences documented in 1978. It is located at the northern edge of its range and is adversely affected by recreational use, development around ponds and water contamination from runoff.

The presence of additional rare plant species associated with coastal plain pond shorelines as well as a more detailed inventory of species associated with vegetative sampling plots has been noted by local botanists Mario DiGregorio and Donald Schall in conjunction with plant and odonate (dragonflies and damselflies) surveys taken in the area for Jacobs Engineering. These surveys have been taken at Triangle Pond which is being used as a "reference pond" for ecological monitoring of plume remediation work that could affect Snake and Weeks Ponds in Sandwich. They study noted that "a highly diverse population of dragonflies and damselflies was recorded

during field inspections. A list of species documented in this and other work is currently being compiled by staff.

There is also believed to be a large uncertified vernal pool located on the Massachusetts Audubon property south of Triangle Pond. This vernal pool should be investigated further. Vernal pools are seasonal waterbodies that provide critical breeding habitat for amphibian and invertebrate species.

There are only a handful of other wetlands within the proposed District that appear on assessors and other maps of the area, although no field survey has been completed to identify wetland areas in the field. Known wetlands are located near the Lawrence Pond Market, south of Camp Lyndon, on the south shore of Spectacle Pond, and at the north edge of the proposed District near Popple Bottom Road. Also, no field work has yet been conducted to identify wildlife migration corridors in the proposed District. However given the large and relatively unfragmented nature of the woodlands in the District, it is likely that interior forest species utilize the area.

Development of the land within the District in a manner consistent with the Sandwich Zoning Bylaws would likely result in fragmentation and loss of habitat within the District including rare species habitat and forested woodlands. Town bylaws generally do not contain standards that would provide for protection of these resources.

4.1.3. Open Space/Recreational Resources

The proposed District provides outstanding open space and recreational resources on both public and private holdings.

Camps: The three summer camps located within the District provide key outdoor recreational opportunities for summer campers as well as seasonal users. These recreational opportunities are discussed below based on information that has been made available to date. Additional information regarding current and future uses has been requested from the camps but had not been provided as of the date of this decision.

Camp Burgess and Camp Hayward are owned and operated by South Shore YMCA. They provide a range of facilities on the 400-acre property adjacent to Spectacle Pond. Facilities at each camp include cabins, a health center, athletic fields, arts and crafts facilities, outdoor amphitheaters, a dining hall, a lodge for entertainment activities, and bathrooms with hot water and flush toilets. In addition, both camps share recreational facilities that include rope courses, a 30' high climbing wall, tennis courts, horseback riding stables and trails. Sleeping accommodations at these camps include cabins, which house eight campers and two counselors, and platform tents. Cabin units are comprised of four individual cabins connected by a common bathhouse and meeting room. The camps are year round facilities equipped with heated living accommodations. In total, the camp facilities can house up to 100 people in heated living accommodations and 180 people if non-heated spaces are utilized.

Camp Burgess and Camp Hayward offer programs geared for summer campers, as well as for school children and other groups throughout the year. The Summer Camp Program combines offerings designed to enhance growth in leadership and communication skills, as well as physical skills. Athletic programs include water sports (sailing, canoeing, swimming, and tubing), horseback riding, land sports (softball, basketball, tennis field hockey, lacrosse, soccer, volleyball, and archery, rope climbing, and rock climbing), and creative arts (arts and crafts, pottery, dance and photography). The Outdoor Education Program at Camp Burgess and Hayward offers programs aimed at fostering an understanding and appreciation for the natural environment. This program includes courses focusing on natural sciences, the arts, as well as leadership training and small group dynamics. Recreational and entertainment amenities associated

with this program include a lodge which includes a meeting room for up to 40 people, a large multipurpose room, and a nautilus exercise room. The Great Escapes Program is a program specifically geared for teenage students. As part of this program, students travel on adventure-oriented trips to various destinations throughout the Northeast and Canada.

Camp Lyndon is a day camp operated by Cape Cod YMCA located on Lawrence Pond. Its facilities, which are available on a year-round basis to schools and other groups, consist of a variety of structures and recreational facilities including cabins, common buildings, swimming facilities, horseback riding trails, tennis courts, athletic fields, and rope climbing courses.

Town lands: Immediately to the north of the proposed district are 471 acres that consist of the Round Hill Country Club and a large amount of undeveloped land that was recently voted for purchase by Sandwich Town Meeting. Of this, 218 acres were purchased with land bank funds. This land abuts the town-owned Maple Swamp Conservation Area and other town and state holdings. It is in the process of being linked through a series of land acquisitions along what is known as Lookout Ridge to the West Barnstable Conservation Area. Additional town owned land is adjacent to the District, enhancing its open character and natural resource values. This land enhances the values of the proposed District, however it was not included within the boundary since there is little to no threat to the resources of the District from development of this land due to its protected state. It also does not have frontage on any of the ponds.

Cape Cod Pathways: The lands within the District were recently studied by the towns of Sandwich and Mashpee with financial assistance from the Cape Cod Commission. The Cross Cape Trail Study examined the feasibility of a 20 mile north-south trail link from Sandy Neck in Barnstable, through the proposed District, to South Cape Beach in Mashpee. The study concluded "A proposed trail alignment could traverse lands near the pond and/or along a negotiated easement path which would not restrict the owner's future use or devalue the property. The essential point regarding the trail corridor through the . . . area is the need to focus on willing property owners of large tracts who could integrate camp and recreation activities with the regional Pathways system." Several recent Cape Cod Pathways hikes including CapeWalk '97 and '99 have traversed this area with permission. With the possibility of a future east-west trail linking Barnstable, Sandwich and Bourne through the Massachusetts Military Reservation, this area could serve as a future hub for the east-west and north-south trails. Little, if any, new trail would be required to be constructed and enhanced trail management could reduce current inappropriate trail uses (dirt bikes, littering, etc.)

Other Open Space Holdings: Other open space resources are also located within and immediately adjacent to the District. The Massachusetts Audubon Society owns several parcels totaling 82 acres on the south shore of Triangle Pond which have the potential to provide some limited recreational access to Triangle Pond that is currently not available. This is an unstaffed property which is currently posted "no trespassing." A dilapidated house and several outbuildings are in need of demolition and an old driveway ends at the pond shore. Several parcels adjacent to the ponds are owned by homeowners associations for developments near the ponds. These include Lakewood Hills, Rolling Ridge, Lakefield Farms, and Peggy's Lane. Most of these areas have some developed facilities for the benefit of the homeowners. None of them are subject to permanent conservation restrictions to ensure that they will remain as "open space."

Pond Access: All of the ponds within the proposed District are classified as Great Ponds. There is limited public access to these ponds on two town-owned pond access sites. There is a roadside access point off Great Hill Rd. in the southeastern corner of Lawrence Pond from which boats can be launched. There is no formal parking lot here, although there is room for several cars along the side of the road. Spectacle Pond has town-owned access via a gravel road at the southwestern end of the pond off Pinkham Rd., suitable for launching small boats and canoes. There is parking at the launch site for about a dozen cars. Neither of these access points is well marked, and both show signs of erosion. Motorboats and personal watercraft are launched from both access points.

Concerns have been raised about noise pollution and surface water pollution from motorized boating and well as litter and inappropriate use of the town landing areas. One of the issues that can be addressed through the DCPC process is management of these areas and associated recreational uses. In addition to the town-owned access points, the Lakewood Hills, Rolling Ridge and Lakefield Farms Associations all have boat ramps leading to the ponds.

Recreational Fishing: Based on a survey conducted in 1988, Lawrence Pond supports a variety of fish including largemouth bass, smallmouth bass, chain pickerel, yellow perch, brown bullhead, pumpkinseed, killifish, redbfin pickerel and bluegill. The goal of the Division of Fisheries and Wildlife is to maintain a self-sustaining largemouth bass fishery in the pond. Spectacle Pond is stocked annually with brook, brown and rainbow trout. The most recent fishery survey was conducted in 1994 and reported brown bullhead, banded killifish, smallmouth bass, rainbow trout, brown trout, brook trout, pumpkinseed, largemouth bass and yellow perch. Both Lawrence and Spectacle Ponds have been treated with limestone to counteract increasing acidity and both were reclaimed in the late 1950s. Triangle Pond is not stocked and no recent fishery study has been completed. A list of known or suspected species includes brown bullhead, banded killifish, white perch, pumpkinseed, bluegill, smallmouth bass and yellow perch.

The town of Sandwich is currently in the process of finalizing its Open Space and Recreation Plan which will make it eligible to receive state matching funds for open space acquisition. The town also has funds through the Cape Cod Land Bank as well as an active land trust, the Sandwich Conservation Trust. Several organizations have expressed an interest in working cooperatively with the town and landowners within the proposed District in an effort to protect key resources in the Three Ponds area. Open space protection, including the use of conservation restrictions, is likely to be an important element of the proposed district in order to achieve the town's stated goals in the nomination application. Objectives in open space preservation are the maintenance of wildlife corridors and the provision of adequate buffers to sensitive resources and scenic roads. Additionally, open space preservation should be planned as much as possible to retain critical natural resource values and viewsheds. Open space preservation in this area will also provide an opportunity to plan for and incorporate a regional trail network, as is currently ongoing as part of the Cape Cod Pathways effort.

4.1.4. Transportation

Existing Conditions

Traffic count data are very limited for the DCPC roads. A count taken in June of 1994 at Great Hill Road north of Newtown Road recorded an average of 2551 vehicles per day.

A review of traffic accident data for the years 1995-1997 reveals the following:

<u>Road</u>	<u>Accidents</u>
Farmersville Road	28
Great Hill Road	15
Popple Bottom Road	2
Pinkham Road	2

Roadways within the DCPC and surrounding the DCPC consist of local rural roadways. The physical characteristics, roadway geometry and traffic control devices for the existing roadways in the DCPC area are described below.

Popple Bottom Road is a two-way 18-foot wide roadway traveling from Great Hill Road into the Three Ponds DCPC area. Popple Bottom Road is a winding country road with numerous vertical and horizontal curves. The roadway surface is made up of chip seal and appears to be in good condition. This roadway surface type would not hold up to traffic impacts as well as a bituminous

concrete surface. No sidewalks or shoulders are provided on this roadway. Popple Bottom Road meanders along the northern boundary of the Three Ponds DCPC.

Great Hill Road is a two-way 20-foot wide roadway traveling from Farmersville Road northerly along the eastern boundary of the Three Ponds area past Popple Bottom Road. Great Hill Road is a winding country road with numerous vertical and horizontal curves. The roadway surface is made up of bituminous concrete and appears in fair to poor condition. No sidewalks or roadway shoulders are provided on this roadway.

Stowe Road is a two-way 18-foot wide roadway traveling east to west through the Three Ponds area. Stowe Road is a winding country road with numerous vertical and horizontal curves and is posted as a scenic road. The roadway surface is made up of chip seal and appears in good condition. This roadway surface type would not hold up to traffic impacts as well as a bituminous concrete surface. No sidewalks or roadway shoulders are provided on this roadway.

Farmersville Road is a two-way 26-foot wide roadway traveling east to west from Stowe Road to Great Hill Road along the south boundary of the Three Ponds area. Farmersville Road is posted as a scenic roadway and is classified as a regional road by the Regional Policy Plan. The roadway surface is made up of bituminous concrete and appears in good condition. No sidewalks are provided in this roadway.

Pinkham Road is a two-way 18-foot wide roadway traveling south to north from Stowe Road along the western boundary of the proposed DCPC. Pinkham Road is a winding country road with numerous vertical and horizontal curves. The roadway surface is made up of chip seal with a small section of gravel road near Stowe Road. The chip seal roadway surface is in good condition. The gravel portion of the road is in poor condition. This roadway surface type would not hold up to traffic impacts as well as a bituminous concrete surface. No sidewalks or roadway shoulders are provided on this roadway.

Potential Traffic Impacts/Growth Issues

Estimated build out projections by the Town of Sandwich for the proposed District indicate that there is the potential for approximately 250 new homes under existing zoning. According to Trip Generation (6th edition, Institute of Transportation Engineers) each dwelling unit generates an average of 9.57 trips per day. The National Personal Transportation Survey estimates average trip length for residential land use to be 9 miles. Based on these estimates, travel generated by the 250 potential dwelling units corresponds to 2,392 vehicle trips per day and 21,532 miles of vehicle travel per day. While all of the 2,392 trips would travel on DCPC roads, their effect (the majority of the 21,532 vehicle miles) would be felt on the surrounding areas and to some extent on other parts of the Cape.

It is also uncertain what impact these 250 units would have on safety. According to Commission Technical Bulletin 96-003, each driveway creates nine new points of conflict (based on the potential for collision between the various turning movements). The American Association Of State Highway Transportation Officials (AASHTO) reports that the number of accidents increases proportionally to the number of access points on rural roads. Another study reports that accidents are more prevalent on roadways having combinations of sharp curves and steep grades.

The 2,392 vehicle trips per day will have impacts on the existing roadways within the DCPC and the future reconstruction of the roadways within the DCPC. The increase in daily traffic will have an effect on the life expectancy of the roadways. The roadways within the DCPC will not last as long with the increase in average daily traffic. And when the time comes to rebuild the roadways, greater impacts may be felt because of the increase in average daily traffic from the 250 residential units.

The increase in average daily traffic may change the functional classification of the roadways within the DCPC and may ultimately lead to changes in the functional classification of the roadways surrounding the DCPC. Functional classification determines the design standards for future reconstruction of the roadways. Design standards control horizontal and vertical alignment, required sight distance, grades, clear zones, and shoulder and roadway widths of the roadways. Generally the higher the functional classification, the more imposing the design standards become on the surrounding environment to accommodate for the roadway. When the roadway ultimately fails and the time comes for reconstructing the roadway, the required alignment, sight distances, grades, clear zones and roadway widths may lead to removing a significant amount of trees and changing the topography of the land within the DCPC. The increase in average daily traffic will ultimately impact the environment, including the quality of life within the DCPC.

To protect safety and reduce general traffic growth, the creation of new housing units or any other high traffic generating uses should be minimized within the DCPC to the greatest extent practical.

4.1.5. Heritage Resources/Community Character

The proposed district has historically been one of the less densely developed areas of Sandwich, known for its agricultural fields and farmsteads during the town's early history, and gradually evolving as the site of several camp properties in the 20th century. The earliest camp, Camp Cotuit, was established on the shore of Lawrence Pond in 1916. Both agricultural and summer camp uses have defined the relatively open landscape of the proposed district and given it distinctive features that separate it from surrounding areas. A 1993 historic inventory of the town by the Public Archaeological Laboratory identified historic properties in the area relative to its early agricultural use and also related to its camp history. One aspect which makes these properties distinctive is their protection of the largely undeveloped nature of the area, reflecting its early development patterns. In a town that has undergone so much development in the late 20th century, this is an unusual feature.

The 1993 inventory also acknowledged the potential for archaeological sites relating to Native American use of the area. Review of the proposed DCPC by MHC confirms that the area contains a known archeological site and several other archaeologically sensitive areas, all in proximity to the 3 ponds.

Related to the historic character of the area are the scenic resources that define it. Several of the roadways that wind through the proposed district are scenic roads bordered by large tracts of undeveloped woodlands and occasional views to the ponds. In addition, the pond shores offer largely undeveloped vistas that help to define the character of this area. These views are not protected by any current regulations, but rather have remained because of the existing land uses. If development of this land were to occur under current regulations, these views would be dramatically altered or lost.

The town has acknowledged the area's camp use as a cultural feature in itself, noting that this use not only affects the character of the area, but also provides a seasonal schedule of events which has existed for approximately a century. A recently completed study "Preserving Cape Cod's Past for the Future" (Hevenor, et. al., 1999) identified both the Pinkham Road Landing and the YMCA camp areas as important cultural landscapes in the town of Sandwich. Both received high scores in a ranking system for their cultural significance and their need for preservation. Summer camps and their accompanying land use patterns were previously much more prevalent on Cape Cod, but many areas historically used as camps have been more densely developed, resulting in a loss of this use. Protection of the scenic character and cultural features of the proposed district would preserve not only this distinctive area of Sandwich, but also a regionally important feature.

DCPC designation would help to protect these resources by allowing for the establishment of special overlay districts and subdivision regulations to better protect the area's historic and scenic features. It would also provide time for the exploration of non-regulatory initiatives to identify and protect these resources. A scenic overlay district could be created to protect the undeveloped character of the district as seen from local roadways and from the ponds. Such a district could also address economic and other incentives to encourage development in the most appropriate locations. Subdivision regulations could be revised to guide development away from historic structures, open landscapes, and archaeological resources. In addition, DCPC designation would allow for further study of the area's archaeological sensitivity and identification of significant sites that need protection.

4.1.6. Growth Planning, Capacity and Infrastructure Issues

In the past several decades, Sandwich has experienced an unprecedented level of growth and development. Much of this development has been residential in nature, specifically in the form of single family dwellings. On a statewide basis between 1970 and 1980, only Boston, Barnstable, and three other communities grew by a higher number of people than Sandwich. Between 1980 and 1990, while the Commonwealth's population declined by 7%, the population of Sandwich almost doubled. On a regional basis, between 1990 and 1998, Sandwich was the fastest growing town on Cape Cod.

The impacts associated with the development boom in recent years have been significant and extensive. Residential growth has resulted in steady increases in the population, number of dwelling units, traffic, wastewater generation, and water consumption. In the face of this rapid development, Sandwich has struggled to keep pace with the increased demands for additional municipal infrastructure and services.

Today Sandwich has a year round population of approximately 20,600, and a summer population of over 25,000. As growth continues at a robust rate, the prospect of full buildout is becoming more tangible. In a buildout analysis conducted in association with the drafting of the 1996 Local Comprehensive Plan, it was estimated that under current zoning a potential 2,116 additional units could be added to the housing stock, for a total of approximately 10,000 units townwide. Within the proposed 550 acre district alone, an estimated maximum of 250 single family homes could be constructed under current zoning. While this number represents just a fraction of the total number of units allowable on a townwide basis, the impacts related to such development within the district are significant. Several of the key associated impacts are discussed below.

One of the most significant impacts of additional residential development is that associated with increases in the school aged population. In the last 20 years, the student population has grown an average of 5 % per year. Further residential development within the proposed district, as allowed under current zoning, could add an additional 100 students to Sandwich schools. In fact, this figure could be higher. Recently revised buildout calculations by the Town of Sandwich indicate a trend toward more residents per household, which could result in a higher school aged population. Furthermore, projected general and school aged populations could be greater if accessory units, as allowed under current zoning, were factored into the buildout calculations.

The impact of this potential population increase of 100 students is considerable, particularly given the fact that both the Oak Ridge and Forestdale schools already accommodate about 200 students over the maximum designed population. An additional 100 students could result in an excess student population of 500, and necessitate the construction of additional school facilities. The fiscal impacts are significant as well. The state mandated foundation budget standard for annual per pupil spending is \$5,500. An additional 100 students could translate into an increase in the annual per pupil spending by more than \$500,000.

In the last two decades, Sandwich's water consumption has mirrored its development patterns. In 1981, the Sandwich Water District (District) pumped approximately 220,000,000 gallons of water a year. By 1995, that figure had almost tripled, reaching approximately 644,000,000 gallons. Given the significant increase in town water use in the past two decades, the District has become actively involved in a search for new public water supplies. Projected future growth underscores the importance of these District efforts. As part of the buildout analysis noted earlier, the town's future water demand and use was calculated. Based on a daily household water consumption rate of 178 gallons, it was estimated that an additional 2,116 residential units townwide could raise water use by an additional 376,648 gallons per day. Of this amount, it can be extrapolated that an additional 250 residential units within the proposed district could potentially result in a water withdrawal of approximately 44,500 gallons a day.

Along with its efforts at seeking new sources for public water supplies, the Town and District recognize the importance of protecting and improving the quality of the existing water supplies, both public and private. The 1996 Local Comprehensive Plan lists the ponds in central and south Sandwich as one of the prime locations of point and non-point discharge threats to surface water. Residential lawn and stormwater runoff, coupled with antiquated drainage systems of older subdivisions, are cited as being partially responsible for eutrophication of the ponds. Clearly, the manner in which stormwater is managed in and around the proposed district ponds will have a significant impact on the water quality in this area in the future.

Increased traffic generation is another impact associated with increased residential development both within the proposed district and townwide. As noted earlier, the 250 potential dwelling units within the proposed district would result in an estimated additional 2,392 vehicle trips per day and 21,532 miles of vehicle travel per day, and have the potential of degrading the level of service on district roadways. The impact of these trips would not only affect roads within the proposed district, but also affect areas surrounding the district.

4.1.7. Regulatory Framework

The principal regulatory framework within the proposed District consists of the Sandwich Zoning Bylaws, Subdivision Rules and Regulations, Board of Health Regulations and Wetlands Bylaw.

All of the land within the proposed District is within the R-2 Residence District. The purpose of this district is "to provide for low-density residential environment in areas of good accessibility while protecting the quality of air, surface water and ground water of the area." The minimum lot area in this District is 60,000 square feet, with 200' of roadway frontage required. Most of the land within the District (684 acres of the District's 692 acres) is also located within the Water Resource Overlay District. In this area, all lots must contain at least 87,120 square feet.

The following uses are permitted within the R-2 Residence District by right:

Single Family Dwelling	Agricultural Uses
School (public, nonprofit, etc.)	Religious Use
Sportsman's Club/Game Preserve	Municipal Use
Stables	Parking (6 or more spaces)
Sale of produce 50% raised on premises	Home Occupation
Lodging for not more than 6 guests	Camper Storage
Temporary construction office	Private Garage/Boathouse

The following uses are permitted with a special permit from the Sandwich Zoning Board of Appeals or Planning Board:

Two Family Dwelling	Cluster Development
Bed and Breakfast	Museum
Accessory Dwelling Unit (1/lot)	Wind generation/turbines
Philanthropic Institution/Club	Earth Removal
Hospital/Nursing Home	Marina
Commercial Picnic Area/Bath House/Beach	Golf Course (Standard/Par 3)
Multi-Family Dwelling (not permitted on any designated scenic roads)	

Within the Water Resource Overlay District, in addition to the larger minimum lot size noted above, the town prohibits a number of uses. All of the uses allowed in R-2 Zoning District would be allowed in the Overlay District. However it should be noted that the construction of wastewater treatment plants is not permitted. Performance standards in the Zoning Bylaw limit loading of nitrate-nitrogen to 5 parts per million (ppm), require a 6" base of loam for cultivated lawns, limit wastewater flows from a site to 20,000 gallons per day, and require runoff from impervious surfaces to be recharged on site. Earth removal operations can expose no more than 5 acres at any one time and must maintain a 10' separation to historical high groundwater.

Structures within the R-2 District must meet setbacks of 50' front yard; and 45' side and rear yard. Lot coverage is limited to 25% and maximum building height is 35 feet. The town also has a lot shape factor requirement that affects the layout of new lots.

Section 3600 of the Zoning Bylaw contains a Pond Setback requirement that affects structures located around specifically named ponds including the three ponds within the proposed District. The pond setback provides that no principal structure can be located less than 50' from the waters of such ponds measured from a specific elevation (Lawrence - 65'; Spectacle - 67'; Triangle - 66'). The bylaw contains a provision for lots that have less than 125' depth and cannot contain a circle of 60' in diameter that permits the Board of Appeals to grant a special permit allowing construction of a single family dwelling closer to the pond, but at least 30' away.

The town has a Surface Water Protection District that encompasses the area within 300 feet of the ponds. This bylaw requires permits for multi-family and commercial uses that have a septic system within this area. The bylaw does not apply to residential uses.

The town has a Development Scheduling Bylaw that limits the number of building permits that can be issued for the construction of new single family dwellings in a calendar year to 170 permits. No more than 6 building permits can be issued to any one applicant in a single calendar year. The bylaw exempts affordable housing.

The Town of Sandwich's Subdivision Rules and Regulations were last revised on September 7, 1997. Generally it is likely that any new subdivision roadways constructed within the District would be either 24' wide collector streets or 20' wide minor streets. The town could also allow construction of an 18' gravel roadway. The dead end road length limit is 500'. The town places an emphasis on natural stormwater management with design based on the 25 year storm, however the regulations contain no prohibition on discharge of stormwater to wetlands and waterways. In reviewing and approving subdivisions, the Planning Board can require an 8' right of way for pedestrian access.

In addition to the creation of new lots via subdivision, the configuration of the undeveloped parcels within the District could allow a large number of frontage lots to be created through the "Approval not Required" process on existing roadways, degrading the character of these scenic roads. It is also possible that lots could be created through the 81-L process which allows structures that predate zoning to be placed on individual lots. It is not known at this time how many of the camp structures would qualify for this provision.

The Board of Health has promulgated health regulations that are more stringent than Title 5 in several respects. New septic systems are required to maintain a 6 foot separation to groundwater and construction of private water supply wells is regulated through standards and a permitting process. In addition, no building can be converted from seasonal to year round use or remodeled, replaced or altered unless the septic system is brought into compliance with Title 5. The town requires a 150 separation between wells and septic systems and prohibits the installation of both a septic system and a private water supply well on any lot less than 40,000 sq. ft. in size. No portion of a septic system is permitted to be located within 100' of a wetland.

The town has a Wetland Protection Bylaw that supplements the protection for wetlands that is provided by the Wetlands Protection Act. The bylaw is more stringent than the Wetlands Protection in several respects, including limitations on wetland alteration and replication and the addition of several interests for which wetlands are protected including recreation, agriculture and aquaculture values.

All of the roads within and surrounding the proposed District, Great Hill Rd., Farmersville Rd., Stowe Rd. and Pinkham Rd. have been designated by Sandwich Town Meeting as scenic roads under the Scenic Roads Act.

Summary

As noted above, the level of development possible within the proposed district could have significant impacts on the resources proposed for protection through this DCPC nomination despite the existing regulatory framework. The demand for public water to meet the needs of the additional development would increase, perhaps requiring additional public supply wells. New development would increase the density of septic systems in zones of contribution to public supply wells, potentially degrading water quality. The amount of residential development allowed under zoning would increase traffic generation, which could significantly reduce safety and levels of service on local and regional roadways. The character of scenic roads would be altered, and unprotected historic and archaeological resources could be disturbed or lost. Forest habitat in the area would be significantly reduced, limiting wildlife corridors and placing more pressure on rare species habitats. Residential development on 2 acre lots would affect the character of the area, although this could be mitigated to an extent through the use of cluster development if such a development was well designed. Other permitted uses within the District could result in highly land intensive uses such as earth removal, golf courses, hospitals, and multifamily dwellings. The appropriateness of these uses merits further consideration. The Town of Sandwich's Planning Board considered possible zoning amendments in fall of 1997 that would have zoned this area for 5 acre minimum lot size. After meeting with landowners and discussing the proposal further, the town tabled this effort.

Current zoning district boundaries and regulations have little relationship to these significant resources that the town hopes to preserve. Both development density and appropriate uses need to be evaluated to determine what forms of development can occur in conjunction with resource protection goals.

5.0 Guidelines for Development

5.1 Introduction and General Guidelines

The following Guidelines ("Guidelines") are hereby adopted by ordinance to guide the development of regulations within the Sandwich Three Ponds District. The objective of these Guidelines is to ensure full protection of the Goals and Interests of the District set forth in Section 5.2 through establishment of Implementing Regulations by the town of Sandwich. Regulations which conform to these Guidelines will control development and protect resources and the public

health within the Sandwich Three Ponds District.

5.1.1. Process for Development of Implementing Regulations

The Sandwich Board of Selectmen and the Sandwich DCPC Committee shall oversee the development, adoption, and enforcement of Implementing Regulations consistent with the Guidelines described herein. Implementing Regulations for the District may take the form of zoning bylaws, regulations, management initiatives, or other means identified in the town of Sandwich which help to achieve the goals and interests of the District. To the extent that some of the resources identified in the goals and interests are currently being evaluated, the level of protection required will be determined by the analysis developed as part of this study.

The town of Sandwich shall propose Implementing Regulations for the District to the Cape Cod Commission. In order to be approved, Implementing Regulations adopted by the town of Sandwich must be found by the Commission to be consistent with these Guidelines, pursuant to Section 11(d) of the Act. The Cape Cod Commission shall determine whether the Implementing Regulations proposed by the Town are sufficient to protect the goals and interests of the District and may then issue a Certificate of Consistency.

The town of Sandwich shall adopt and incorporate Implementing Regulations within twelve (12) months of the District's designation by ordinance. If the town of Sandwich fails to adopt and incorporate implementing regulations which are a consistent with these Guidelines within twelve (12) months, the Commission may grant an additional ninety (90) days. After the additional ninety (90) days, the Commission may propose and the Assembly and the County Commissioners may adopt by ordinance implementing regulations for the District. Upon the adoption of certified Implementing Regulations, local permitting previously stayed by the District nomination may proceed consistent with the newly adopted Implementing Regulations. The Cape Cod Commission shall review the Implementing Regulations and may certify regulations that are different than those suggested herein if the Commission finds that such regulations sufficiently advance the purpose of the Act and the goals and interests of the DCPC as described in Section 5.2. The Commission shall determine whether the Implementing Regulations proposed by the Town are sufficient to protect the Goals and Interests of the DCPC and may then issue a Certificate of Consistency. Upon the adoption of certified Implementing Regulations, the local permitting previously stayed by the DCPC nomination may proceed consistent with the newly adopted Implementing Regulations.

5.1.2. Flexibility in Application and Property Equity

The Implementing Regulations shall address the issue of property equity and shall adopt regulations concerning property equity that are directed toward avoiding regulatory takings. The Implementing Regulations shall investigate methods of addressing property equity, with a strong preference for the use of transfer of development rights (TDR) and other creative methods to minimize the impacts of development on the resources of concern within the District. Variances should be issued only when necessary to meet constitutional requirements. The Town may, as permitted by law, decide on a case-by-case basis how the pursuant regulations will be applied, in order to take account of differences in lot area and type, the particular nature of the resources at stake, and the type of development proposed.

5.1.3. District Management Plan

The Sandwich Board of Selectmen and the Sandwich DCPC Committee shall oversee the development and implementation of a management plan for non-regulatory issues that need to be addressed to protect the goals and interests of the District. To the extent that some of the resources identified in the goals and interests are currently being evaluated, the level of protection required will be determined by the analysis developed as part of this study. The plan should be developed

within one (1) year of designation of the District. This deadline may be extended by the Cape Cod Commission provided that the town is making a good faith effort to develop Implementing Regulations and develop a plan to address these issues. The management plan shall examine and make recommendations on the issues listed below. Other issues may be examined as they are found necessary to protect the goals and interests of the District.

- a) Development and implementation of a public education program for property owners, visitors and others that will provide suggestions for reducing or eliminating impacts to the goals and interests of the District;
- b) Evaluation of existing pond uses and development of guidelines for public access to and recreational use of the lands and waters within the District, including the control of inappropriate uses and potential linkages in the Cape Cod Pathways network;
- c) Identification of priority acquisitions, conservation restrictions or other land protection techniques that would be appropriate to the District;
- d) Identification of remediation measures for existing direct discharges of stormwater within the District and a plan to implement these measures.
- e) Evaluation of the potential for development of additional water supply wells within the boundaries of the District, taking into account the potential impacts of such a water supply on the surface water resources within the District and the critical habitat associated with such resources.
- f) Consideration of the development of a pond monitoring network. This network could be staffed through the use of citizen volunteers, town staff, or a combination. Data to be collected could include water quality parameters and water levels. Data collected could be used to assist in the preparation of pond management plans.

The management plan developed by this committee shall not be considered "implementing regulations" under the Cape Cod Commission Act.

5.2 Goals and Interests

The goals and interests of this District shall be:

- to enhance protection of water quality within existing and potential future zones of contribution to public water supply wells;
- to enhance protection of water quality within Scorton Harbor/Creek and the Three Bay coastal embayments;
- to evaluate and protect potential well areas to serve future town needs;
- to protect and enhance the water quality of Lawrence, Spectacle and Triangle Ponds;
- to maintain the scenic character of area roads and views of pond shores and woodlands;
- to preserve cultural landscapes, archaeological sites, historic structures and traditional land uses;
- to protect the District's key natural resources including rare plant and wildlife habitat, wetlands and coastal plain pond shores, vernal pools, unfragmented forested areas, fisheries, and wildlife corridors;
- to protect and enhance existing vegetative cover in order to maintain water quality and wildlife habitats;
- to encourage the continued use of land within the District for open space and recreational purposes including summer camps;
- to enhance recreational opportunities within the District that are compatible with resource protection and to ensure appropriate management and uses of existing recreational facilities;
- to foster land uses that are compatible with the resource protection goals of the District and to manage growth in a manner that will not result in adverse impacts on the town's infrastructure; and
- to encourage the development of a management plan to address nonregulatory issues and

foster education about the sensitive resources within the District.

5.3 Definitions

Definitions shall be the same as those included in the Cape Cod Commission Act, the Regional Policy Plan, and the town of Sandwich Bylaws and Regulations.

5.4 Review of Developments of Regional Impact (DRI) within the DCPC

The regulations adopted pursuant to these Guidelines in no way alter the process for the referral and review of Developments of Regional Impact according to the Act and Regulations of the Cape Cod Commission.

5.5 Water Resources

The town shall establish adequate protections for ground and surface water quality and quantity within the District

5.5.1 In order to protect existing water supplies and potential future supplies, the town should apply a 5 ppm nitrogen loading standard throughout the District.

5.5.2. Future public water supply well sites in the District should be identified consistent with projected demand. No development should be allowed within 400 feet of these future public supply wells.

5.5.3. Board of Health regulations and/or the SWPD bylaw should be amended to require a minimum of a 300 ft. setback from all pond shorelines for soil absorption systems (SAS) for all new construction, including single family homes. In cases where lots are too small or in the cases of existing systems with inadequate setback, SAS should be located the maximum possible distance from the ponds. If an adequate water quality study of the pond has been completed and its results indicate that acceptable water quality will be maintained now and at buildout, this requirement should be waived.

5.5.4. The town should adopt a surface water recharge protection overlay district to protect pond water quality in Lawrence, Spectacle and Triangle Ponds.

5.5.5. Town stormwater regulations should ensure that stormwater from roads and other land uses within the District is either discharged outside a 300' buffer area to the ponds or is adequately treated for phosphorus. Consideration should also be given to enhanced treatment in areas with steeper slopes. If an adequate water quality study of the pond has been completed and its results indicate that acceptable water quality will be maintained now and at buildout, this requirement should be waived.

5.5.6. Town wetland regulations should ensure that adequate natural buffer strips are maintained on shoreline properties.

5.6 Wildlife and Ecological Resources

The town shall establish adequate protections for wetland resources, rare or significant wildlife species habitat, fisheries, unfragmented forest habitat and wildlife travel corridors within the District.

5.6.1. The town should complete a natural resources inventory of lands within the District and revise zoning and land use regulations based on land suitability and carrying capacity.

5.6.2. The town should establish enhanced protections for wetland resources, rare species

habitat, coastal plain pond shores and other sensitive natural resources within the District.

5.6.3. The town should adopt clearing limitations for land areas within the District directed toward maintaining unfragmented forest and wildlife corridors.

5.6.4. The town should consider increasing the Conservation Commission's existing 50' undisturbed buffer requirement along the shorelines of coastal plain ponds.

5.6.5. The town should consider the creation of an overlay district to protect significant resources within the District, as well as the establishment of other mechanisms for habitat conservation planning and protection within the District.

5.6.6. The town should pursue mechanisms to implement its draft Open Space and Recreation Plan and create incentives for open space protection within the District.

5.6.7. The town should promote the identification and certification of vernal pools within the District and provide protection for such areas through Conservation Commission regulations.

5.7 Cultural and Scenic Resources

The town shall establish means for protecting the rural and scenic character of the District and for increasing protection of historic and archaeological resources and distinctive cultural landscapes.

5.7.1. Regulations should be established to protect the rural character of the District's scenic roads, including a 100 foot vegetated buffer along the roadways, incentives for shared curb cuts/common driveways and other means of reducing the need for structural improvements which would be inconsistent with the character of the District.

5.7.2. Subdivision regulations should be revised to address historic and archaeological resources on proposed development sites. In addition, the town should consider developing a special permit process to protect historic resources and archaeologically sensitive areas. In conjunction with this, the town should pursue further identification of archaeologically sensitive areas and cultural landscapes in the area to guide development review.

5.7.3. The town should consider establishing a scenic overlay district to limit development potential within identified cultural landscapes and scenic vistas, limit the height of structures, and offer incentives for relocating development to more appropriate locations.

5.8 Growth Management

The town shall review the zoning bylaw and subdivision regulations for inconsistencies with the goals of the District and propose zoning amendments, as necessary, to achieve all of the goals set forth in Section 5.2 of this decision.

5.8.1. The town should consider strengthening the existing level of protection that is provided for scenic roads to preserve the rural character of the District's roadways. Development should be limited to that which can be accommodated by the existing roadway conditions without resulting in operational or safety hazards and without the need for roadway widening and other structural improvements.

5.8.2. The town should revise the table of uses and dimensional standards in the zoning bylaw to eliminate land intensive or inappropriate uses and encourage compatible uses as well as to reduce the impact of permitted development.

5.8.3. The town should consider revising its cluster development bylaw to either provide for mandatory clustering within the District or increased incentives for the use of this provision.

5.8.4. The town should explore mechanisms to reduce or redistribute density within the District in accordance with the water quality, transportation, natural resources, open space and community character resources within the District. Mechanisms to reduce or redistribute density which should be explored including open space protection (fee and less than fee interests), downzoning, and transfer of development rights.

5.8.5. A special permit process should be considered for major residential developments to provide opportunities to protect significant environmental and cultural resources and limit demands on community infrastructure from new development.

5.9 Open Space and Recreational Resources

The town shall take measures to foster the permanent protection of open space and the appropriate use of recreational facilities within the District.

5.9.1. The town should use the natural resources inventory identified in Section 5.6.1. to identify the most critical open space resources and work to permanently protect these lands for their open space values.

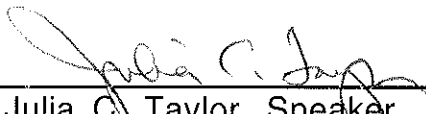
5.9.2. The town should review existing uses and develop regulations to ensure appropriate recreational uses of the lands and waters within the District including motorized boats and personal watercraft and to manage access points in a manner that will not derogate from the values of the District.

5.9.3. The town should continue to identify the most feasible route for the Cape Cod Pathways/Cross Cape Trail and develop regulations to ensure that key linkages maintained when land is proposed for development.

5.9.4. The town should take steps to safeguard the permanent open space status of existing town landings, cluster open space and homeowner association open space.

5.9.5. The town should develop regulations for the construction of private docks and piers on the ponds within the District to ensure that the resources of ponds are not adversely affected by such construction.

Adopted on February 2, 2000 by the Assembly of Delegates.



Julia C. Taylor, Speaker

Approved by the Board of County Commissioners, Feb. 9, 2000, at, 11:00 a.m.
Date Time

