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Quivet Neck/Crowe's Pasture District of Critical Planning Concern Decision

1.0 General

As authorized by Section 10 of the Cape Cod Commission Act, the Cape Cod Commission ("Commission") hereby proposes the Quivet Neck/Crowe's Pasture area, hereinafter described, for designation as a District of Critical Planning Concern ("District" or "DCPC"). The designation of this District was recommended by the Dennis Board of Selectmen. The purposes of this District shall be protection of natural resource interests including unfragmented forest habitat, rare plant and wildlife habitat, vernal pools, freshwater and saltwater wetlands, coastal plain pondshores, aquaculture, shellfish beds and wildlife corridors; protection of historic and archaeological resources including Native American settlement areas and the character of the rural landscape; protection of groundwater quality and water quality in Cape Cod Bay, Quivett Creek, and freshwater ponds; to maintain scenic views from Cape Cod Bay and beaches, Route 6A and Brewster; to maintain scenic views of pondshores; to encourage the continued and future use of land within the District for open space and passive recreational purposes; and to manage growth in a manner that is compatible with the resource protection goals of the District.

2.0 Background

On August 22, 2001 the Cape Cod Commission received a proposed nomination for the Quivet Neck/Crowe's Pasture District of Critical Planning Concern from the Dennis Board of Selectmen pursuant to Section 10(d) of the Cape Cod Commission Act. The Commission voted to accept the nomination for consideration on October 4, 2001. Commission staff met with representatives of the Town on October 30, 2001 to discuss the nomination and significant resources in the area. The Commission voted on November 15, 2001 to extend the review period for the District for 60 additional days to January 30, 2002. A subcommittee of the Commission conducted a public hearing on November 28, 2001 at the Wixon Middle School in Dennis, Massachusetts to take testimony on whether the area should be proposed for designation as a DCPC and to consider issues and goals related to such designation. The public hearing was continued to January 10, 2002.

The subcommittee met to deliberate on the proposed DCPC on December 5, 2001 at the Commission offices. 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 on December 5, 2001 to recommend to the full Commission that the nomination be forwarded 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 met on December 18, 2001 to review the draft decision, and voted to approve it for transmittal to the full Cape Cod Commission hearing on January 10, 2002. The subcommittee met on January 10, 2002, to review changes to the draft decision and voted to approve it for transmittal to the full Cape Cod Commission.

The draft decision included:

- 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;
- a written description and map of the boundaries of the area.

A hearing was held before the full Commission on January 10, 2002 to vote on the proposed designation.

Testimony and/or written letters in support of the proposed designation were received from the following: Dan Fortier (Dennis Town Planner), Wayne Bergeron (Dennis Conservation Commission), Cleon Turner (Chair of the Dennis Board of Selectmen), Charles Lattanzio (Chairman of "Save the Crowe"), Tom Murphy (Dennis Conservation Trust), Norm Taupeka (President Quivet Neck Homeowners Association), Joseph Masse, David Gessner, Heidi Schadt, Dory DiManno, Frank Dahlstrom, David Sears, Ron Slowek (Chairman of the Local Planning Committee), Nancy Thatcher Reid (Historical Commission), Maggie Geist (Association for the Preservation of Cape Cod), Margaret and Richard Gigger, Russell A. DeConti (The Compact of Cape Cod Conservation Trusts, Inc.), Duane R. Mason, Joanne and Hunter Pollock, Maureen Joyce, Charles L. Sumner (Town Administrator, representing the Brewster Board of Selectmen), Seth Wilkinson (Conservation Administrator, representing the Brewster Conservation Commission), Eric Levy (representing the Brewster Cape Cod Pathways Committee), and Steven Eldredge (Planning Board Chairman, representing the Brewster Planning Board and Open Space Committee).

Testimony and/or written letters of concern or opposition were received from the following: James Veara, Norman Sears, Kevin O'Haire, Louis Seminara, Roger Goodell and Douglas W. Lebel.

The nomination and notices of public hearings relative thereto, the Commission staff's reports, notes, exhibits and correspondence, the transcript and minutes of meetings and hearings and all written submissions received in the course of our proceedings are incorporated into the record by reference.

On January 10, 2002, the full Commission voted to transmit the following decision to the Barnstable County Assembly of Delegates.

3.0 Description of the Proposed District

The proposed boundary of the Quivet Neck/Crowe's Pasture District of Critical Planning Concern encompasses approximately 250 acres of land within the area known as Quivet Neck and Crowe's Pasture in East Dennis. The area is generally bounded on the southeast

by Quivett Creek and on the north by Cape Cod Bay. The westerly boundary is defined by previously permitted and developed subdivisions that have been excluded from the proposed DCPC area. The official boundary as proposed by the Dennis Board of Selectmen is shown on the attached map (Attachment A) prepared by the Cape Cod Commission and dated 10/3/01. Included within the proposed District are nine existing single-family homes, approximately 105.7 to 120.8 acres owned by the town of Dennis, and approximately 35 additional acres subject to a conservation restriction.

The Commission finds that the land and water within the proposed Quivet Neck/Crowe's Pasture 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 proposed Quivet Neck/Crowe's Pasture District, as established, are easily identifiable and appropriate given the purposes of the designation.

4.0 Type of District

In accordance with the DCPC Guidance Document issued by the Cape Cod Commission in December 1990, the town of Dennis identified that the area is eligible for designation for any or all of the following:

- a) Water Resource District
- b) Aquaculture Resource District
- c) Wildlife, Natural, Scientific, or Ecological Resource District
- d) Cultural, Historic, Architectural, or Archaeological Resource District
- e) Hazard District
- f) Waterfront Management/Watersheet Zoning District

The Cape Cod Commission finds that the proposed Quivet Neck/Crowe's Pasture District as described in Section 3.0 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, archaeological, historic, economic and recreational resources, as described below; and
- b) the presence of substantial areas of sensitive ecological conditions which render the area unsuitable for development, as described below.

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 supports a finding that the proposed Quivet Neck/Crowe's Pasture area is of regional importance because of the presence of possible archaeological resources, rare and threatened species, sensitive freshwater resources and pristine coastal resources that affect land and water beyond Dennis town

lines. The town of Brewster, the Brewster Conservation Commission and the Brewster Conservation Trust have protected approximately 257 acres or more of contiguous conservation land along Quivett Creek, the southeastern boundary of the proposed District. Further, the Commission finds 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 finds that controlled development of land and water within the proposed Quivet Neck/Crowe's Pasture District is important to the protection of drinking water quality; protection of surface and coastal water quality; protection of aquaculture and shellfish resources; preservation of the area's unique scenery, cultural and archaeological resources and community character; protection of rare plant and wildlife habitat and significant natural resources; and the provision of open space and well-managed recreational opportunities. The Commission finds 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

There are multiple significant water resource areas within the area proposed for the DCPC, including coastal and freshwater resources.

Quivett Creek is located along the southeasterly border of the proposed DCPC. The creek system includes a large marsh area, and a herring run to its headwaters at Bound Brook Pond. A portion of the nominated area contributes groundwater to Quivett Creek, a nitrogen sensitive marine embayment. Quivett Creek is considered an outstanding resource. Development in the vicinity of Quivett Creek would contribute significantly to the degradation of water quality including nitrogen loading from septic systems, road runoff and lawn fertilizer, sedimentation from erosion and bacterial contamination.

Fresh water resources include Coles Pond and Little Coles Pond. Together these areas are in excess of ten acres and have been identified as rare plant habitat. Coles Pond and Little Coles Pond are classified as kettlehole ponds as they have no inlets or outlets and are dependent solely on groundwater or precipitation as a source of supply. The ponds are poorly flushed and as such are very sensitive to additions of nutrients and sediment. Impacts from development that would negatively impact the ponds include nitrogen loading from septic systems, phosphorus loading from wastewater, road runoff and lawn fertilizer, sedimentation from erosion and bacterial contamination.

The soil conditions in this area have many development limitations. Many of the areas have high groundwater levels and are poor for septic system installation due to the minimal separation distance between leach field and the groundwater table. Highly permeable soils found in this area indicate minimal filtration of wastewater and have high erosion potential.

There is significant development potential on the upland areas of the proposed DCPC. While additional homes could be built in the area under current town zoning and may be able to meet the 5.00 parts per million nitrate nitrogen loading general water resources classification minimum performance standard (MPS), this MPS may be insufficient for water quality protection.

The proposed Quivet Neck/Crowe's Pasture District contains regional water resources that are susceptible to degradation from future development, and designation as a DCPC would allow the Town time to develop strategies to address protection of the area's ground and surface water quality.

4.1.2 Coastal Resources

The area proposed for DCPC designation includes approximately 250 acres and has several important coastal features that are described in the nomination. The proposed boundaries will embrace stretches of coastal bank, coastal beach and barrier beach on Cape Cod Bay subject to coastal erosion. The 134 acres of beach and dune that comprise the barrier beach system shelters approximately 205 acres of salt marsh, and also serves as habitat for Piping Plover. The area is open to the public and limited operation of off-road vehicles is permitted. Uplands adjacent to coastal resources include important natural features like coastal plain ponds, habitat that supports endangered plant species, cedar wetlands, and other manifestations of the Cape's historical landscape.

A portion of the proposed DCPC has been identified as a marine recharge area, and the nomination materials describe the town's concern about nitrogen inputs from individual septic systems that could potentially be placed in unsuitable soils. Existing water quality along the coast and in Quivett Creek is believed to be good, and the value of adjacent salt marsh and intertidal areas to serve as habitat for shellfish is a priority for residents and the town's natural resource professionals. The Quivett Creek estuary is also an anadromous fish run. Strict management of stormwater, wastewater treatment, turf and buffer zone management, and other strategies to limit land-based pollution and maintain water quality characteristics would help to preserve these public trust resources. Coastal habitat can also be adversely impacted by other human activity such as buffer zone alteration, construction of coastal structures such as docks and piers and erosion control devices, and by the simple pursuit of some recreational activities in dynamic coastal environments.

The DCPC submittal contains compelling information regarding coastal resources within and dependant upon the Crowe's Pasture and Quivet Neck area. DCPC designation could be used as a vehicle to engage natural resource management issues that are described in the submittal. These actions may include assessing the long-term implications of continued coastal erosion and its potential to affect private properties and infrastructure, evaluation of areas that could be sensitive to the installation of private docks and piers, and review of the area's capacity to support shellfish aquaculture, shellfishing and other activities. These management issues should be addressed in order to safeguard the character of this area and to address potential secondary and cumulative impacts from existing development and from development that may occur in the future.

4.1.3 Natural Resources and Open Space

The proposed District is a sensitive resource area due to the presence of a variety of natural features. The area has been mapped a Significant Natural Resource Area by the *Cape Cod Regional Policy Plan* due to the presence of rare species habitat, wetlands, pond shore and potential public water supply areas. According to the *Natural Heritage Atlas, 2000 – 2001 Edition*, portions of the Quivet Neck area are mapped as Priority Habitat for Rare Species, and other areas are mapped as Estimated Habitat of Rare Wildlife. According to the *Cape Cod Critical Habitats Atlas*, Coles Pond is mapped as a coastal plain pond; the southern portion of the DCPC is bordered by extensive saltmarshes associated with Quivett Creek; and sections of the northern boundary on Cape Cod Bay include barrier beaches.

According to the *Barnstable County Soil Survey*, the soils in this area are primarily Plymouth loamy coarse sands (various slopes), excessively drained, stony soils suitable for native pasture and woodland. These soils are limited in their capacity for septic absorption because of the rapid to very rapid permeability. The USDA/Natural Resources Conservation Service has mapped the area as containing soil types which are limited by permeability and/or high groundwater. Consequently, the limited filtering capacities of many of the soils within the District could lead to groundwater contamination.

Materials submitted by the town of Dennis as part of the Quivet Neck DCPC nomination include additional information about sensitive resources in this area. According to the nomination papers, the bayside beaches provide habitat for the state-listed Piping Plover. The nomination papers also note that Plymouth Gentian and New England Blazing Star, both state listed species of special concern, have been documented in the Quivet Neck area. Plymouth gentian is a globally rare plant that thrives under the specialized environments found in coastal plain pond shores, such as Coles Pond. The naturally fluctuating water levels, water quality, and specialized environment of coastal plain ponds can be threatened by septic systems, water withdrawals, and other impacts associated with development.

Material submitted by the Dennis Conservation Commission notes that other rare and endangered plant and animal species may be found within the District, including Coastal Heathland Cutworm, Eastern Box Turtle, Straight-lined Mallow Moth and Salt Reedgrass.

The Town Planner provided information indicating the presence of Cooper's Hawk and Spotted Turtle (a recently de-listed species and a species of special concern, respectively) and the possible presence of Ladies Tresses orchid, a special concern species. More information should be collected on these resources and the extent of their habitats prior to any development in the Quivet Neck/Crowe's Pasture area.

The DCPC area also contains town of Dennis open space lands. Crowe's Pasture, located in the northeastern corner of the proposed DCPC area, is the site of an on-going habitat restoration project funded in part by the Department of Environmental Management. One of the goals of the project is to restore Crowe's Pasture to an open field/meadow environment, the results of which could possibly provide additional valuable habitat for the Northern Harrier, a state listed threatened species also sighted in this area. Development in

the vicinity of this habitat restoration site could potentially have impacts on this restoration/rare species habitat area.

The DCPC area is bounded to the south by saltmarsh and Quivett Creek, which is a herring run. Freshwater wetlands appear to be present throughout the proposed District, including land adjacent to the cemetery containing a small bog, land adjacent to Coles Pond containing what appears to be an isolated wetland, and bordering vegetated wetlands located around Coles Pond. In addition, the Natural Heritage Program's *Aerial Photo Survey of Potential Vernal Pools*, Spring 2001 indicates the possibility of several vernal pools within the boundaries of the proposed District.

The DCPC area is presently densely vegetated with a combination of pitch pine/oak woodlands and other hardwoods, and dense shrub vegetation. This dense and varied habitat together with pond, salt and freshwater wetlands likely make this area significant for a variety of wildlife.

4.1.4 Heritage Resources/Community Character

The proposed area is located within the Old Kings Highway Regional Historic District and is distinctive as one of the region's large remaining open landscapes. Much of the character of the proposed District is defined by its low density pattern of development, with many homes originally built as summer cabins. There are currently nine existing homes within the 250 acre proposed District. Under existing subdivision regulations, a higher density of development would suburbanize the area by distributing residences over the remaining upland. Even under the Town's optional cluster development bylaw, the greater number of homes allowed would largely eliminate the present rural character of the area. Given the fragility of the character defining aspects of the proposed District, including large areas of unfragmented forest, the largely unspoiled pondshore of Coles Pond, the largely unspoiled views of the shoreline from Cape Cod Bay and the bayside beaches, and the unspoiled views of the proposed District from Route 6A and Brewster, development in the proposed District needs to be planned in a comprehensive manner if the unique character of Quivet Neck/Crowe's Pasture is to be preserved.

As noted in the DCPC nomination, the Town has not formally inventoried the proposed DCPC area for historic and archaeological resources. However, the area is likely to contain archaeological resources, based on both local knowledge and on the area's proximity to a wide variety of environmental resources. As part of the DCPC process, the State Archaeologist at Massachusetts Historical Commission (MHC) can be consulted regarding the area's archaeological sensitivity. Probable areas of archaeological resources can be identified through an archaeological sensitivity assessment based on the presence and/or absence of combinations of environmental variables, documentary data and ground conditions. Archaeological survey work may also be conducted to establish the boundaries of archaeological sites. Either method will provide information that allows the Town to guide future development away from sensitive archaeological resources.

DCPC designation would help to protect these resources by granting time for the establishment of regulations that would better protect the area's archaeological, historic

and scenic features. Development and subdivision regulations could be revised to guide development away from open landscapes, historic and archaeological resources, and regional views of the proposed District. DCPC designation would provide time for the exploration of non-regulatory initiatives to identify and protect these resources. In addition, designation as a DCPC would allow time for further study of the area's archaeological sensitivity and identification of significant sites that need protection.

4.1.5 Regulatory Framework

The principal existing regulatory framework within the approximately 250 acre proposed District consists of the Dennis Zoning Bylaws, Subdivision Rules and Regulations and wetlands regulations.

Dennis Zoning Bylaws:

All of the land within the proposed District is within the Rural Residential District (R-60), which requires 60,000 square feet and 50 feet of road frontage per lot. The purpose of this district is "To provide for residential sites while at the same time encouraging open space, preserving or enhancing scenic views, protecting the character of the historic environs, encouraging continuation of or re-establishment of agricultural activities while recognizing site and area limitations for on-site waste water disposal systems in terms of drainage, soil suitability, proximity to surface and sub-surface water resources and slope."

Structures within the R-60 District must meet setbacks of 75' front yard; 30' side and rear yard. Lot coverage is 15% (includes building coverage only) which allows a 9,000 sf footprint on a zoning minimum 60,000 sf lot. The maximum building height is 2 1/2 stories or 35'.

The Dennis Zoning Bylaw allows Open Space Village Development on properties that consist of at least 5 acres of upland. The bylaw includes increased density incentives and requires that at least 30% of the property must be preserved for recreation or conservation within the development.

Dennis Subdivision Rules and Regulations:

The current town of Dennis Subdivision Rules and Regulations were last revised on February 3, 1997. Subdivisions constructed within the proposed District would likely have a right-of-way of 40 feet and a road width of at least 18 feet. The dead end road length limit is 800 feet unless greater length is necessitated by topography or other local conditions and a Planning Board waiver of the road length is granted. Design requirements for subdivision stormwater management systems are based on a 25-year storm. The Town requires all stormwater to be disposed of through subsurface leaching; the use of leaching trenches is prohibited. The Town prohibits paved surface runoff from being discharged directly into any natural wetland or waterbody. In addition to the creation of new lots via subdivision, the configuration of the undeveloped parcels allows for the development of approval not required lots along existing roadways in the proposed District.

Dennis Wetlands Regulations:

The town of Dennis has a Wetlands Bylaw, the purpose of which is to protect the foreshores, wetlands and related water resources in the town of Dennis by controlling activities deemed to have a significant effect upon wetland values. The Town Conservation Commission is empowered to deny permission for any removal, dredging, filling, or altering of subject lands within the Town if, in its judgement, such denial is necessary to fulfill the purposes of this bylaw on either the subject lands or within 100 feet (100') of subject lands.

Old Kings Highway Historic District Regulations:

Buildings, outbuildings, and other structures such as fences and walls within the proposed District require approval from the Old Kings Highway Historic District Committee prior to construction.

Dennis Board of Health Regulations:

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. On land adjoining lakes, ponds, streams, tidal waters, flats and all tributaries to such tidal waters and flats, sewage disposal systems are required to terminate not less than seventy-five feet from a point at least two mean feet above the mean high water. No septic systems are allowed within any area of a lot subject to shifting sands including coastal beaches, coastal dunes, barrier beaches and coastal banks.

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. New development would increase the number of septic systems within the groundwater recharge area of Quivett Creek, Coles Pond and Cape Cod Bay, potentially degrading water quality. Unprotected historic or archaeological resources could be disturbed or lost. The rural character and unspoiled open views of the area from regional locations could be degraded or lost due to inappropriate siting of buildings. Forest habitat in the area would be significantly reduced, limiting wildlife corridors and placing more pressure on rare species habitat. Residential development on 60,000 square foot 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.

Current zoning regulations have little relationship to the significant resources that the Town hopes to preserve. Development density needs to be evaluated to determine how much development can occur in conjunction with resource protection goals.

5.0 Suggested Guidelines for Development

5.1 Introduction and General Guidelines

Based on the findings articulated above regarding critical concerns in the area, the Cape Cod Commission, in consultation with the town of Dennis, proposes that the following Guidelines (“Guidelines”) be adopted by ordinance to guide the development of regulations within the Quivet Neck/Crowe’s Pasture DCPC area. In recommending these Guidelines, the Cape Cod Commission finds that future development is not adequately controlled by existing public or private regulations to protect the resources and further the regional goals identified in this decision. The objective of these Guidelines is to ensure full protection of the Goals and Interests of the District as set forth in Section 5.2 through establishment of Implementing Regulations by the town of Dennis. The Commission finds that management plans and regulations that conform to these Guidelines will control development and protect resources and the public health within the Quivet Neck/Crowe’s Pasture District.

5.1.1 Process for Development of Implementing Regulations

The Dennis Board of Selectmen and the Dennis DCPC Steering Committee shall oversee the development and adoption 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 Dennis 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 or need to be evaluated, the level of protection required will be determined by the analysis developed as part of the DCPC Steering Committee study process. Commission staff will assist the town of Dennis in performing development and resource analyses within the District and in drafting appropriate regulations.

The town of Dennis shall propose Implementing Regulations for the District to the Cape Cod Commission. In order to be approved, Implementing Regulations adopted by the town of Dennis 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 Dennis shall adopt and incorporate Implementing Regulations within twelve (12) months of the District’s designation by ordinance. If the town of Dennis fails to adopt and incorporate implementing regulations which are 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, the local permitting previously stayed by the DCPC nomination may proceed consistent with the newly adopted Implementing Regulations.

5.2 Goals and Interests

The objective of these Guidelines is to ensure full protection of the following goals and interests of the District through the establishment of implementing regulations by the town of Dennis. The goals and interests of this District shall be:

- to enhance protection of groundwater quality within the recharge areas to Cape Cod Bay, Quivett Creek, Coles Pond and Little Coles Pond;
- to enhance protection of water quality within Cape Cod Bay, Quivett Creek, Coles Pond and Little Coles Pond;
- to maintain the scenic character of views from neighboring towns, regional roadways and Cape Cod Bay;
- to maintain public scenic views of pondshores and woodlands;
- to preserve cultural landscapes, archaeological sites and historic structures;
- to protect the District's key natural resources including rare plant and wildlife habitat, wetlands and coastal plain pondshores, vernal pools, unfragmented forested areas, shell fisheries, fisheries, and wildlife corridors;
- to evaluate, enhance and protect, as deemed necessary, existing vegetative cover in order to maintain water quality and wildlife habitat;
- to encourage the use of publicly owned land within the District for open space, passive recreational purposes, aquaculture, habitat management and related studies;
- to encourage appropriate management of future recreational opportunities within the District in a manner that is compatible with resource enhancement and protection;
- to manage growth in a manner that will not result in adverse impacts on archaeological, cultural, historic, visual or natural resources;
- to encourage the development of an overall management plan to address non-regulatory issues and foster education about the sensitive resources within the District;
- to undertake coastal resources management planning in order to preserve critical characteristics of coastal habitat;
- to safeguard soil and slope stability in order to preserve resource protection;
- to encourage cluster zoning in order to manage growth in a manner that will maximize natural resource, archeological, cultural, historic and scenic vista protection; and
- to delineate hazard areas so as to maximize storm damage prevention and prevention of pollution.

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 Dennis 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. Development within the proposed Quivet Neck/Crowe's Pasture DCPC area has the potential to impact all of the water resources of concern identified in the Regional Policy Plan: drinking water, drinking water wells, ponds, rivers and coastal embayments. Based on preliminary analyses, the functions of these resources do not appear to have been unduly impacted by existing levels of development. Additional analyses are necessary to evaluate the impacts of future development on these resources.

5.5.1 A 5 ppm-N nitrogen loading standard should apply throughout the district to protect existing water supplies and potential future supplies.

5.5.2 Standards should be established based on groundwater flow and surface runoff characteristics to protect the quality of future private wells (drinking and irrigation), including setback requirements from roads, existing development, and septic systems.

5.5.3 Water table information should be refined in the DCPC area through groundwater mapping and monitoring to delineate sub-watershed recharge zones. This information should be used in turn to refine pond and marine recharge boundaries and private well protection areas within the DCPC.

5.5.4 An assessment of lots subject to high groundwater elevations should be conducted using Certified Soil Evaluation procedures, the USGS high groundwater methodology (Cape Cod Commission Technical Bulletin 92-001) and soils information or FEMA floodplain data. Areas subject to flooding should be identified and development guidelines developed for these areas.

5.5.5 The Town should require that all new septic system design plans be adjusted to account for maximum high groundwater conditions, as referenced in 5.5.4.

5.5.6 A phosphorous loading analysis for Coles Pond and Little Coles Pond should be conducted to determine the trophic status of the Pond and assess its assimilative capacity for additional phosphorous, as County and Town resources allow.

5.5.7 The Town should require minimum setbacks from all pond shorelines (300 foot setbacks are recommended unless the results of the Town assessment indicate alternate setback standards to be more appropriate) for soil adsorption systems (SAS) for all new construction including single-family homes. Further, all onsite sewage disposal upgrades shall be located to maximize shoreline setback and incorporate enhanced pollutant removal, including but not limited to phosphorous, bacteria and nitrogen.

5.5.8 Town stormwater regulations should strive to incorporate vegetative swales and ensure that stormwater from roads and other land uses within the District is discharged outside the recharge area to ponds. Where this is not feasible, stormwater should be adequately treated for phosphorus and other pollutants. 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 the results indicate that acceptable water quality will be maintained now and at buildout, the regulations should waive this requirement.

5.5.9 The Town should require that all lots located in contributing areas to Quivett Creek maximize wastewater treatment and include Massachusetts DEP approved I/A technology for nitrogen removal.

5.5.10 Regulations should be established to protect fresh waters from development impacts, including erosion and sedimentation control, limits on the amount of impervious surface, site disturbance, and, if possible, management of the extent and intensity of irrigation and limits on chemical fertilization and road treatments.

5.5.11 The Town should consider methods for remediation of existing problematic stormwater discharges within the District.

5.5.12 The Town should encourage the development of a pond monitoring network. This network could be staffed through the use of citizen volunteers, town staff, or a combination thereof. Data to be collected could include water quality parameters and water levels. Data collected could be used to assist in the preparation of a pond management plan.

5.6 Ecological and Recreational Resources

The Town shall evaluate existing local statutes and regulations and establish, as deemed necessary, additional regulations to protect wetland resources, rare or significant wildlife species habitats, and mechanisms for protecting the rural character of Quivett Neck. The Town will take steps to educate the public regarding impacts to sensitive resources within the District and provide public access to public lands.

5.6.1 The Town should, to the extent feasible, complete a natural resources wildlife and plant habitat inventory of the lands within the District, and revise zoning and land use regulations based on land suitability and carrying capacity, and maximizing habitat protection. In conjunction with this, the Town should inventory and map wetland resources within the District.

5.6.2 Regulatory protections and buffers to wetlands, waterbodies, and vernal pools should be increased as necessary, consistent with the recommendations of the natural resources inventory and should strive to meet the standards established in the Regional Policy Plan, to better protect these resources.

5.6.3 The Town should consider overlay districts to protect significant or sensitive resources within the Quivett Neck area. Other mechanisms for habitat conservation

planning and protection within the District should be considered, including establishment of incentive based development criteria.

5.6.4 The Town should develop criteria for open space acquisition and conservation restrictions based on natural resource values, development potential, historic/architectural values and scenic vistas that would be appropriate within the District.

5.6.5 The Town should investigate alternatives to reduce and manage clearing and grading on development sites within the District, directed toward maintaining unfragmented forest and wildlife corridors, and including establishment of incentive based development criteria.

5.6.6 The Town should consider revisions to existing zoning regulations that allow permitted uses that are land consumptive and/or have the potential for negative impacts on important resources in the District.

5.6.7 The Town should develop and encourage implementation of a public education program for property owners, visitors and others that will provide suggestions for reducing or eliminating impacts to the resources within the District.

5.6.8 The Town should develop guidelines for public access to and passive recreational uses of public lands, ponds and coastal areas within the District, excluding activities previously permitted, and explore possible Cape Cod Pathways linkages.

5.7. Coastal Resources

The Town shall evaluate and revise, where necessary, existing wetland protection statutes, ordinances and by-laws for coastal wetlands, coastal habitats and lands subject to coastal storm flowage within the District.

5.7.1 The Town should prepare a scope for the development, maintenance and implementation of a Coastal Resources Management Plan for the District.

5.7.2 Regulations should be established to protect coastal waters from development impacts, including erosion and sedimentation control, limits on the amount of impervious surface, management of the extent and intensity of irrigation, and limits on chemical fertilization and road treatments, as supported by scientific and natural resources inventories being developed by the Town.

5.7.3 The Town should identify areas (if any) that are suitable for the construction of shoreline structures such as elevated walkways and stairways that provide access to coastal resources, and structures that extend below mean high water, and areas where such structures will be prohibited.

5.7.4 Regulations should be established to ensure appropriate siting of utilities to minimize susceptibility to flood hazards. Regulations should also include any additional building standards and requirements for private and public development

that would apply in hazard areas within the proposed District boundaries, and should provide constraints on private development and redevelopment within and immediately adjacent to FEMA flood zones.

5.7.5 The Town should identify and analyze the issues related to long-term nonstructural management of erosion and shoreline retreat, protected species habitat, invasive plant species, foreseeable use conflicts in the coastal, estuarine and marine environments and habitats.

5.7.6 The Town should identify and analyze existing and potential areas suitable for the development of aquaculture facilities, strategies to balance recreational, municipal and commercial shellfish interests, and strategies to protect and enhance fish habitat and migratory routes.

5.8 Heritage and Scenic Resources

The Town shall establish means for protecting and enhancing habitat management, the rural and scenic character of the District and for increasing protection of documented historic and archaeological resources.

5.8.1 Regulations should be established to promote habitat management and to protect the rural character of the District, including enhancement of vegetated buffers (including encouraging things such as hedgerows) along the shoreline, roadways and internal walking trails, 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.

5.8.2 Local regulations and by-laws (either zoning or subdivision) should be established and/or revised to address historic and archaeological resources within DCPC development sites. Included among these would be requirements for historic and archaeological inventories as a part of the development approval process to protect historic resources and archaeologically sensitive areas. In conjunction with this, the Town should pursue further identification of archaeologically sensitive areas within the proposed district to guide development review through an archaeological sensitivity assessment or archaeological survey work.

5.8.3. The Town should identify visually sensitive areas, including views of pondshores and coastal shores, and views from regional roadways (Route 6A) and neighboring towns (Brewster), and establish zoning and subdivision regulations to limit development potential and guide project review within these identified cultural landscapes and scenic vistas. The Town should consider developing a scenic overlay district and special permit process to protect cultural landscapes and scenic vistas. Mechanisms to reduce visual impact could include buffers from significant resources, limits on the height and bulk of structures, development within a specified range of elevations, limits on clearing and grading, and incentives for relocating development to more appropriate locations.

5.9 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.

5.9.1 The Town should consider a new cluster development bylaw for the study area to either provide for mandatory clustering within the District or increased incentives for the use of this provision.

5.9.2 The Town should identify means to reduce or redistribute density within the District in accordance with the findings of a groundwater recharge study, soils inventory, natural resources inventory, vernal pools and wetlands inventory, archaeological and historic resources survey, and visual sensitivity analysis. Mechanisms to reduce or redistribute density which should be explored include open space protection (fee and less than fee interests), downzoning and transfer of development rights.

5.9.3 A development approval process should be developed for residential subdivisions which includes requirements for resource inventories to provide opportunities to protect significant visual, environmental, archaeological and cultural resources.

5.9.4 The Town should consider regulations to ensure that changes in use or changes in intensity of use of pre-existing structures within the District are consistent with the goals.

Elizabeth Taylor
Elizabeth Taylor, Chair

Jan 10, 2002
Date

Commonwealth of Massachusetts

Barnstable, ss.

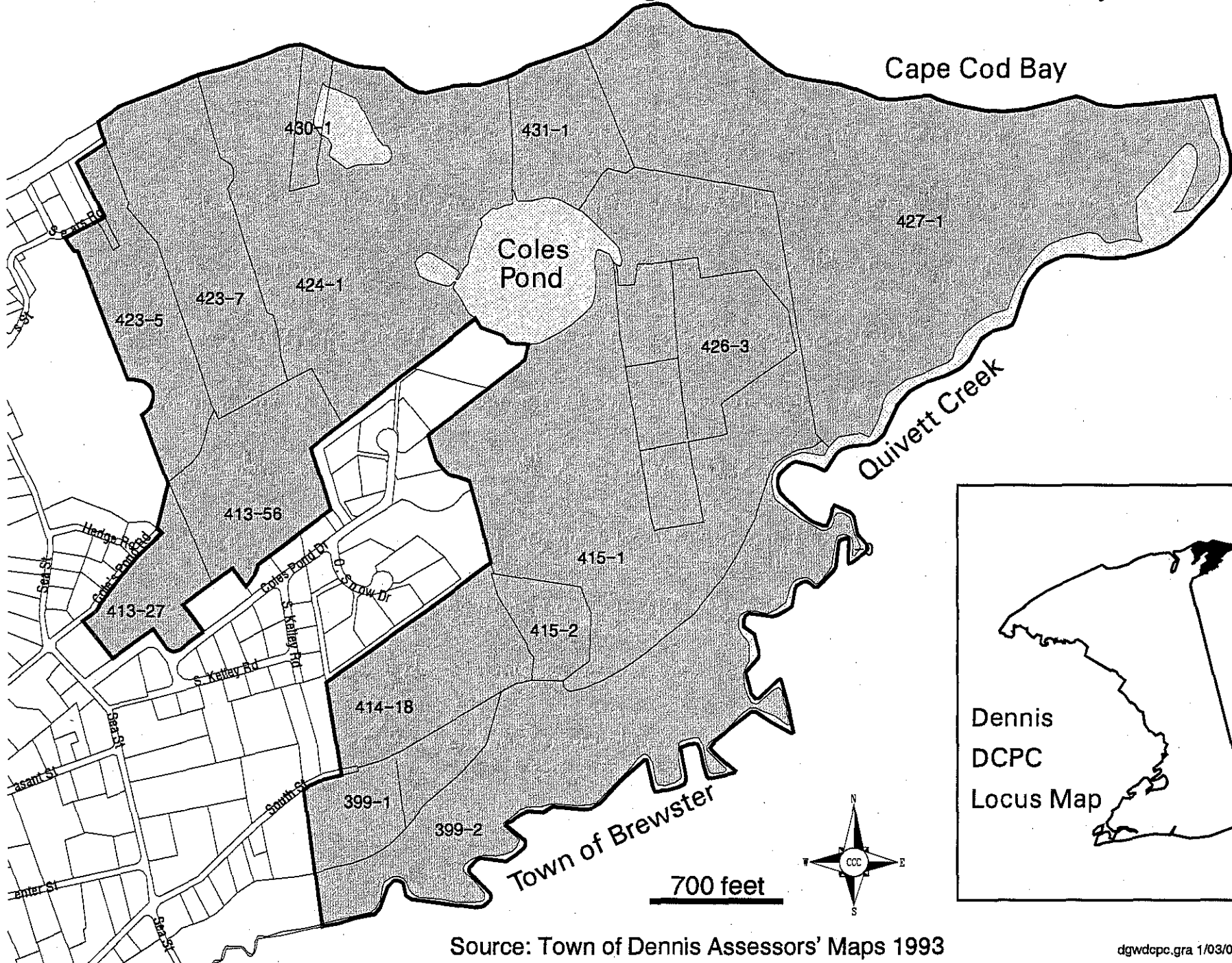
On this 10th day of Jan, 2002, before me personally appeared Elizabeth Taylor, to me known to be the person described in and who executed the foregoing instrument, and acknowledged that she executed the same as her free act and deed.

Katharine L. Peters
Notary Public
Commonwealth of Massachusetts



My Commission expires:

Quivet Neck/Crowes Pasture District of Critical Planning Concern Nomination Official Boundary



Source: Town of Dennis Assessors' Maps 1993

dgwdcpc.gra 1/03/02