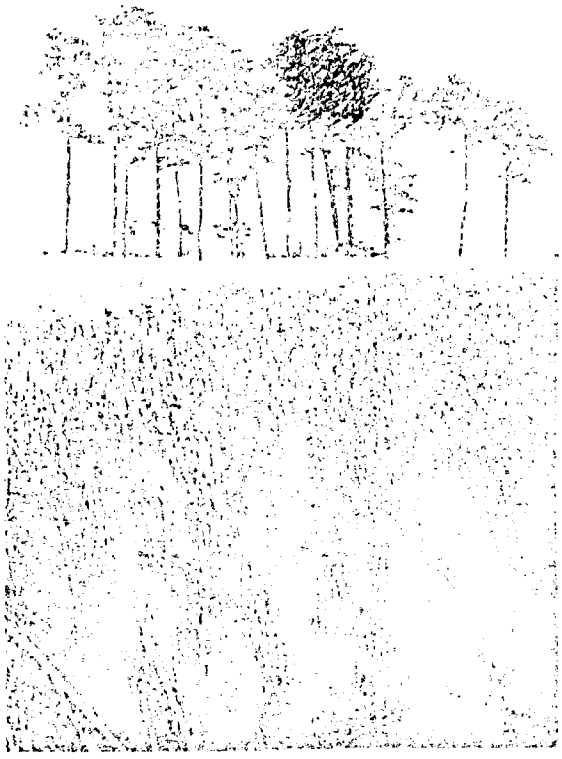
POTENTIAL APPLICATION of EXCLUSION PROVISIONS of the CHESAPEAKE BAY CRITICAL AREAS ACT



DORCHESTER COUNTY
MARYLAND

Prepared for:

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Cambridge, Maryland

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TABLE OF CONTENTS

Introduction

The Chesapeake Bay Critical Areas Act was passed in 1984 in recognition of the fact that the quality of the water of the Chesapeake Bay and its tributaries and the quantity of associated fish and wildlife have declined due to human activity and that management of activities in tidal shoreline areas is needed to minimize further adverse impacts. The purpose of the Act is to provide for the development and implementation of a resource protection program for the Chesapeake Bay, tidal tributaries, and tidal shoreline areas. It provides for the development of local management programs based upon criteria developed by a Chesapeake Bay Critical Areas Commission appointed by the Governor and for areas designated as part of the Chesapeake Bay Critical Areas. Areas initially designated as part of the Chesapeake Bay Critical Areas include lands under the Chesapeake Bay and its tributaries to the head of tide and all land and water areas within 1000 feet of tidal waters, tidal wetlands, and the heads of tide. Until a local management program has been approved by the Commission, local governments in approving projects proposed to be located in the Chesapeake Bay Critical Areas must find that (1) the proposed development will minimize adverse impacts on water quality and (2) the applicant has identified fish, wildlife and plant habitat which may be adversely affected by the proposed development and has designated the development so as to protect those identified habitats whose loss would substantially diminish the continued ability of populations of affected specied to sustain themselves.

In developing its local critical areas management program a local jurisdiction may modify the boundaries of its Chesapeake Bay Critical Area by including additional areas it deems appropriate or deleting areas through utilization of the exclusion provision of the Act. It is the purpose of this report to describe the exclusion provisions, the condition under which it may be applied, a methodology for identifying potential exclusion areas and the costs and benefits of excluding areas from a local critical areas management program. Case studies of areas with different present and proposed land uses will be discussed to illustrate how the exclusion provision might be applied in different conditions.

Exclusion Provision of the Chesapeake Bay Critical Areas Act

The Act provides that local jurisdictions may exclude two types of areas from its Chesapeake Bay Critical Area:

(1) Areas which are part of a developed urban area in which, in view of available public facilities and applicable laws and restrictions, the imposition of a program would not substantially improve protection of tidal water quality or conservation of fish, wildlife or plant habitats. (Such areas must be at least 50% developed and not less than 2,640,000 square feet in contiguous area or comprise the entire critical area of a municipality whichever is less)

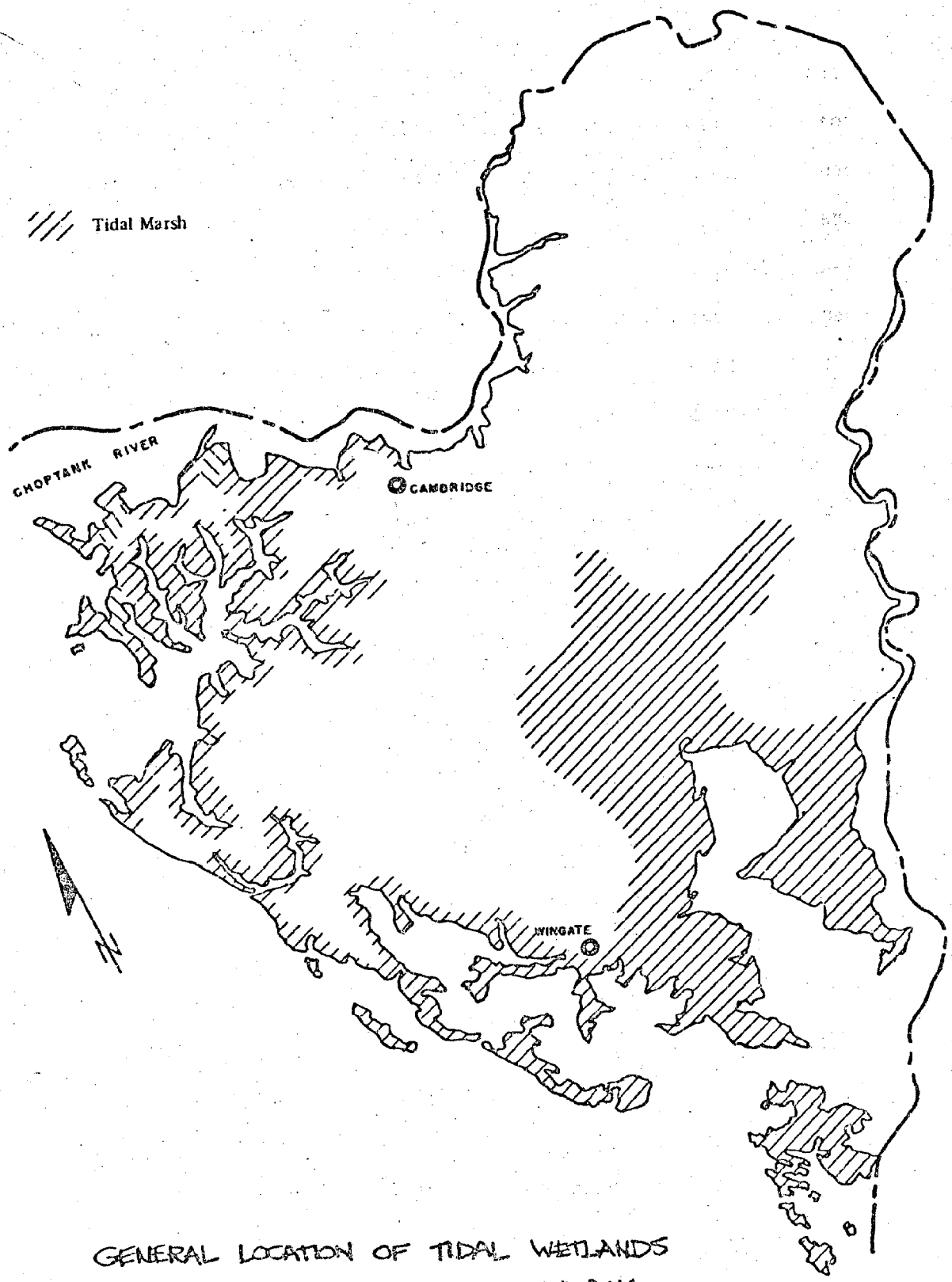
(2) Areas located at least 1,000 feet from open water and separated from open water by an area of wetlands which it is found will serve to protect tidal water quality and fish and wildlife or plant habitats from adverse impacts of development in the excluded areas.

1. Value of Wetlands as Fish and Wildlife Habitat

One of the basic assumptions of this report on how the exclusion provision might apply in Dorchester County is that before an area is excluded from the critical area based upon the extensive wetlands criteria it must be shown that fish, wildlife and plant habitat on or adjacent to the site is adequately protected. The proposed criteria for local Chesapeake Bay Critical Area Management Programs identify Habitat Protection Areas that must be protected if a county is to comply with the provisions of the Chesapeake Bay Critical Area Act. As discussed in more detail below, before an area can be excluded from the Critical Area Program, management measures must be instituted to ensure protection of such areas. The assertion is also made that tidal wetlands themselves are important fish and wildlife habitat and thus in any areas proposed for exclusion, measures must be made to ensure their protection. The purpose of this section is to discuss the composition of tidal wetlands in Dorchester County and document their values as fish and wildlife habitat.

There are over 95,000 acres of tidal wetlands in Dorchester County, representing 36 percent of the State's total. Of this total 900 acres are tidal scrub shrub, 6500 acres are tidal wooded swamp, 2000 acres are tidal high marsh, 73,400 acres are brackish high marsh, and 12,300 acres are brackish low marsh.

According to the report, Coastal Wetlands in Maryland, the tidal marshes act as food sources for fish and wildlife habitat in several different ways. Generally from 10 to 30 percent (up to 35 to 40 percent) of the plant growth in tidal fresh marshes is consumed by animals while the plant is alive.



GENERAL LOCATION OF TIDAL WETLANDS
DORCHESTER COUNTY, MARYLAND

The following table reproduced from Coastal Wetlands in Maryland indicates the relative value of various wetland types as direct wildlife food sources. Approximately half the remainder is decomposed in the wetlands as organic material in the wetland soil where it is fed upon by fiddler crabs, snails, amphipods and other microscopic invertebrate as well as by great numbers of fungi, bacteria, and other microorganisms. Such animals and microorganisms in turn act as food sources for others at higher levels in the food chain. The remainder of the decomposed material is flushed out to open water by tidal action where it is a food source for microscopic animals known as zooplankton and by fish and shellfish directly. Fish and shellfish also utilize the zooplankton as food sources. Studies have shown that the tidal fresh marshes containing such plants as wild rice and smartweed are of the greatest value as direct food sources to animals while the decomposed material from brackish marsh provides more food to fish and shellfish in tidal waters.

The brackish marshes are used as nesting and wintering areas by a variety of waterfowl including black ducks, teal, and Canadian geese. The black ducks, teal and gadwall also use brackish marshes as breeding areas. Shorebirds such as dunlin, greater yellowlegs, and lesser yellowlegs use the mudflats and shallow pools of the meadow cordgrass and Olney Threesquare marshes as feeding areas while willets, black rail, redwinged blackbirds and seaside sparrows nest in meadow cordgrass marshes. Shrubs such as marsh elder and groundsel bush which are found along marsh channels and marsh areas adjacent to wetlands form important components of the habitat for several types of birds. Least bittern, long-billed marsh wren and redwinged blackbirds nest in such shrubs and feed in the adjacent herboreous

Table 1. Wildlife food values for the thirty-one types of subaerial vegetation in the coastal wetlands of Maryland. The values are rounded to the nearest 5%

TYPE		VALUE
SHRUB SWAMP		
11	Swamp rose	5
12	Smooth alder/Black willow	5
13	Red maple/Ash	15
SWAMP FORESTS		
21	Baldcypress	70
22	Red maple/Ash	15
23	Loblolly pine	15
FRESH MARSHES		
30	Smartweed/Rice cutgrass	100
31	Spatterdock	30
32	Pickerelweed/Arrowarum	90
33	Sweetflag	35
34	Cattail	50
35	Rosemallow	5
36	Wildrice	45
37	Bulrush	40
38	Big cordgrass	40
39	Common reed	35
BRACKISH HIGH MARSHES		
41	Meadow cordgrass/Spikegrass	60
42	Marshelder/Groundselbush	80
43	Needlerush	15
44	Cattail	40
45	Rosemallow	5
46	Switchgrass	20
47	Threesquare	55
48	Big cordgrass	10
49	Common reed	5
BRACKISH LOW MARSHES		
51	Smooth cordgrass	50
SALINE HIGH MARSHES		
61	Meadow cordgrass/Spikegrass	20
62	Marshelder/Groundselbush	5
63	Needlerush	5
SALINE LOW MARSHES		
71	Smooth cordgrass, tall growth form	15
72	Smooth cordgrass, short growth form	15

marshes. Such birds also use cattail marshes as nesting areas along with king rails and Virginia rails. Stands of switchgrass are of special importance as the optimum habitat in the upper Chesapeake region for the short-billed marsh wren and the American bittern. Rails use several types of brackish marshes for breeding purposes including Olney Threesquare, smooth cordgrass and meadow cordgrass.

The fresh marshes contain the greatest diversity of flowering plants and during the late summer and early fall serve as granaries when seed production is at a peak serving a variety of birds including redwing blackbirds, bobolinks, rails, teals, pintails, mallards and other ducks. Waterfowl such as Canadian geese, Black duck, widgeon, ring-neck ducks, whistling swan, and other migrating waterfowl use these types of marshes as resting and wintering areas. Cattail marshes are used as nesting areas by long-billed marsh wren, common gallinules, least bittern and redwing blackbirds. Bobolinks, common snipe, sora and many other types of marsh birds also use tidal fresh marsh for habitat. Great blue heron and green heron are also found in such areas.

The shrub swamp and tidal forested swamp provide excellent cover, an abundance of food, a variety of nest sites and a ready source of water for wildlife. They are important breeding areas for wood ducks, mallards, herons, egrets, ibises and many types of songbirds. They are of high value to quail and woodcock as feeding areas and cover. Other types of waterfowl utilizing wooded swamp for habitat are hooded and common mergensers, bufflehead, mallards, widgeon, and Black ducks.

Many types of mammals also are attracted to coastal wetlands for hunting and feeding, cover and nesting. Muskrats and nutria are two characteristic inhabitants of tidal marshes. Voles, meadow mice, shrews and other small

mammals are also found abundantly in coastal marsh areas.

Many mammals that are most characteristic of upland habitat use tidal wetlands as feeding areas including raccoons, skunks, weasels, opposums and whitetail and sitka deer.

Reptiles and amphibians are also prevalent in tidal wetlands. Several types of frogs, snakes and turtles call the tidal wetlands home as well.

Tidal freshwater areas are used as spawning areas for anadromous fish of which the most well known is the striped bass. The tidal freshwater marsh itself is a spawning ground for several species of fish including killifish, mummichug, bluegill and pumpkinseed. Several of these species use the tidal freshwater marsh and associated shallows and waters as year-around resident species. The tidal freshwater marsh and associated shallows also serve as important nursery areas for a variety of fish including the striped bass, shad, herring, menhaden and perch.

Thus, from the above discussion it can be seen that tidal wetlands are, in fact, important fish and wildlife habitat areas, and that it is important that activities on adjacent upland areas be undertaken in a manner that does not adversely affect their fish and wildlife habitat values.

Presumably, one of the principal reasons for the wetland exclusion provision of the Chesapeake Bay Critical Area Act is their value for assimilation of nutrients and sediments. However, it should be noted that studies have shown that in many cases marshes act only as seasonal sinks absorbing nutrients in the spring and summer and releasing them in the fall as the marsh plants die off or die back. In addition, their assimilative capacity of nutrients, toxics and sediments is not unlimited; excessive amounts can

adversely affect tidal wetlands, the tidal waters beyond them and the fish and wildlife using them as habitat.

2. Discussion of Additional Measures Considered Necessary to Support Exclusion of Areas from the Chesapeake Bay Critical Area

As noted above, for an area identified as a possible exclusion area to be actually excluded from the County's Chesapeake Bay Critical Area Management Program it must be shown that water quality and fish and wildlife habitat would not be adversely affected by activities occurring in them. In order to identify the type of measures that the County would need to adopt to show that the adverse impact of present and proposed activities would be minimized, an analysis of the different types of existing and potential land uses that might occur in the potential exclusion areas was performed.

Three types of land use were considered: forestry operations, agricultural activities and low-density residential use. These land uses were selected for discussion in this section because of their dominance in the County's Chesapeake Bay Critical Area. More intensive land uses are discussed in the section on potential urban exclusion areas.

Forestry operations, particularly if they do not involve clearcutting, generally have a limited adverse impact on water quality. As of July 1, 1985, forestry operations must meet the requirements of the State's Sediment Control Act by following a Standanrd Sediment Control Plan or a more detailed plan as part of a Forest Management Plan. Therefore, few additional management measures would be required to support exclusion of such areas other than the possible need for enforcement mechanisms to ensure compliance with such plans, unless the area in question contains identified habitat protection areas. On the other hand, inclusion of such areas in the County's Critical Area Management Program would not appear to place much additional restrictions on forestry

operations. The principal one would involve the placement of severe restrictions of the cutting of trees within a 100-foot buffer area rather than the slightly less severe restrictions on the cutting of trees in a buffer area of 50 feet required in the State Sediment Control Law. In either case, if habitat protection areas are present, the portion of the area containing them would either have to be included in the County's Chesapeake Bay Critical Area or surrogate measures be instituted to ensure their protection.

However, with respect to the possible conversion of forested lands to agricultural or residential use, additional management measures would need to be instituted to ensure that potential adverse impacts on water quality or the adjacent tidal wetlands are minimized. Foremost among them would be revision of the zoning ordinance, subdivision regulations or other local ordinances to ensure maintenance of a forested buffer of at least 100 feet in width adjacent to the tidal wetlands. If steep slopes, hydric soils or highly erodible soils are present, the areas containing them are to be included in the forested buffer area to be reained in its natural condition. Such measures might be instituted through the County's subdivision regulations by requiring developer/owner submission of deed restrictions which ensure protection of the buffer area.

In addition, measures would have to be instituted to ensure that the conversion of the land did not involve the clearing of forestland on highly erodible soils (k .35) or steep slopes (slopes 15%) because of the potential impact on the adjacent tidal wetlands and the tidal waters lying beyond them to insure consistency with the intent and purpose of the Act. In the case of conversion to residential development, management measures would also

be needed to ensure that the removal of forested vegetation was kept to the minimum. In addition, the density of the residential development would need to be reduced to two to five acres per dwelling units rather than one dwelling unit per acre allowed in such areas by the present zoning to ensure that the proposed residential development does not adversely affect water quality on fish and wildlife habitat. This recommendation is prompted by studies performed in the completion of the EPA Chesapeake Bay Study which notes lower pollutant loading rates at these lower residential densities.

If areas presently in agricultural use are to be excluded from the critical area, the principal concern that must be addressed is similar to that for forested areas; namely, protection of areas identified as habitat protection areas in the critical area program development. This applies particularly to maintenance of forested areas adjacent to tidal wetlands and non-tidal wetlands.

If the portion of the farmland being considered for exclusion is adjacent to the tidal wetland but is not forested, provisions would be needed to maintain, and establish if necessary, a vegetated buffer strip of at least 25 feet adjacent to the tidal wetlands. Review of County Critical Area boundary maps indicates that in most cases such a strip already exists and the requirement that it be maintained would not place a major constraint on the present use of the land.

However, exclusion of areas presently in agricultural use may involve a somewhat hidden cost to the owners of farm property since the State Department of Agriculture has made a commitment to provide priority assistance to farmowners in the Chesapeake Bay Critical Area to ensure they have developed and are implementing Soil Conservation and Water Quality Plans within five years of the date of adoption of the criteria. If a farm is not in the

critical area it will likely be considered lower in priority for the provision of technical assistance in the development of such plans and the provision of State cost-share funds for implementing Best Management Practices.

It should be noted that,as presently written, the criteria for Chesapeake Bay Critical Area Program development do place restrictions on the density of residential development that occurs in areas presently in agricultural use. The proposed restriction is one dwelling unit per 20 acres. Clustering of dwelling units at a greater density is encouraged as long as the overall density requirement is met in order to maintain the integrity of agricultural and forest lands in the Chesapeake Bay Critical Area. If an area presently in agricultural use was excluded from the critical area that density requirement would not have to be met but a minimum density of two to five acres would likely be required to ensure that adverse impacts of development on tidal waters and wetlands was minimized. In most cases such a density corresponds to existing conditions in much of Dorchester County where soil limitations require larger lot sizes than that required by the zoning ordinance in order to meet Health Department regulation for the placement of septic tanks.

Therefore, the real effect of such a zoning change is only to establish consistencey between County zoning and Health Department standards. If the use of berm infiltration ponds were increased,the density of development on individual lots might be larger but the overall density of future subdivisions would likely be about the same due to land area requirements and standards for pond siting.

3. Identification of Potential Urban Exclusion Areas

Since the Urban Exclusion Area provision refers to a developed urban area with public facilities, it is assumed that such an area must be presently serviced by water and sewer facilities (or will be in the near future) and must be at a density of greater than one acre. Industrial and commercial areas would meet this criteria.

For an area meeting the above criteria to be excluded, it must be shown that there are sufficient laws and regulations in place to ensure that there would not be significant adverse impacts on water quality and fish and wildlife habitat if the area is not included in the County's Chesapeake Bay Critical Area.

In addition, an area proposed for exclusion under this provision must be at least 50 percent developed and either be in an incorporated municipality or be at least 2,640,000 feet in contiguous area (with the upland portion of the critical area being 1000 feet in width. This is equivalent to an area with 1/2 mile of shoreline). (1000' x 2640').

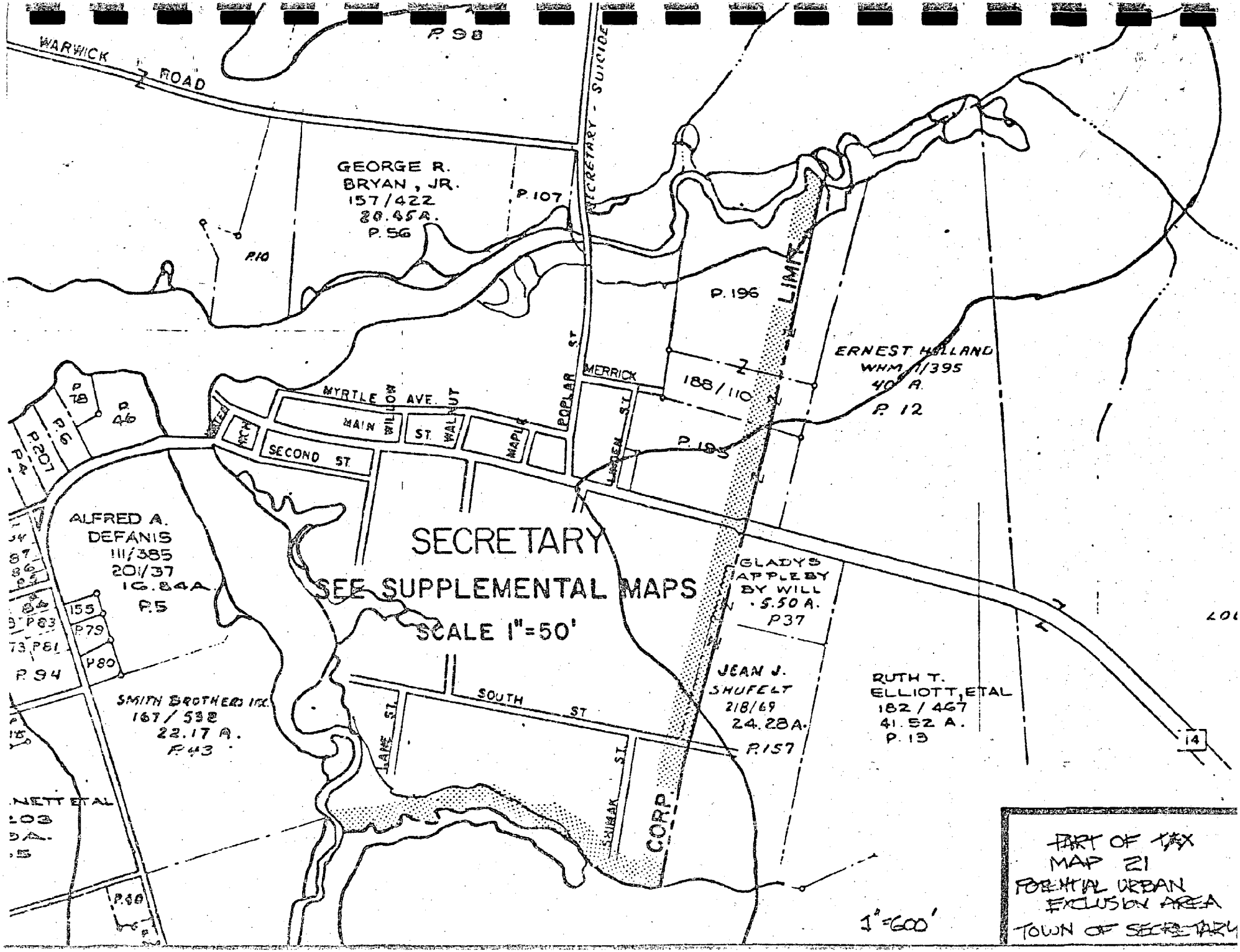
Areas zoned M-R, M-A-R, R-1 or Conservation are not eligible for exclusion since they cannot be developed at a density greater than an acre and thus cannot be considered as urban areas. County areas zoned R-2 can only be considered as potential exclusion areas if they are serviced by water and sewer services.

Although areas zoned Industrial and Commercial are of sufficient intensity to qualify as potential urban exclusion areas provided they meet the other conditions for exclusion, there appear to be few, if any, areas zoned industrial or commercial in the County's critical area.

Thus, the only areas zoned R-3 which are 60.6 acres in size and at least 50 percent developed or are within the borders of municipalities would qualify as potential urban exclusion areas. To gain insight into what might be involved in excluding such areas examination of two case study areas will be examined.

The case study area shown on tax map 21 is the town of Secretary. Its critical area is almost entirely either developed or in public ownership. It shares water and sewer facilities with the town of East New Market. Areas for potential growth will likely occur in areas between the town and East New Market away from its critical area. If the town wishes to be excluded, a few additional management measures would probably have to be adopted to ensure that future develpment would not adversely affect water quality or fish and wildlife habitat. Such measures would primarily involve increased setbacks from tidal water and wetlands for new construction on any remaining vacant shoreline lots and maintenance of a natural buffer edge adjacent to tidal waters and wetlands. Conservation of tree cover on such lots might also need to be encouraged. Institution of such measures are consistent with the policies of the town's Comprehensive Plan.

However, exclusion of the town's shoreline areas from the Chesapeake Bay Critical Area Program would make the town ineligible for funding to revise its plan and regulations to address the objectives of the Chesapeake Bay Critical Area Act, some of which may also be considered important by the town residents. More important, funding requests for projects located in its critical area from State programs such as the Shoreline Improvement Fund, Program Open Space, etc., may receive lower priority than if they were included in the Chesapeake Bay Critical Area. Since the town would be considered an Intensely Developed area,

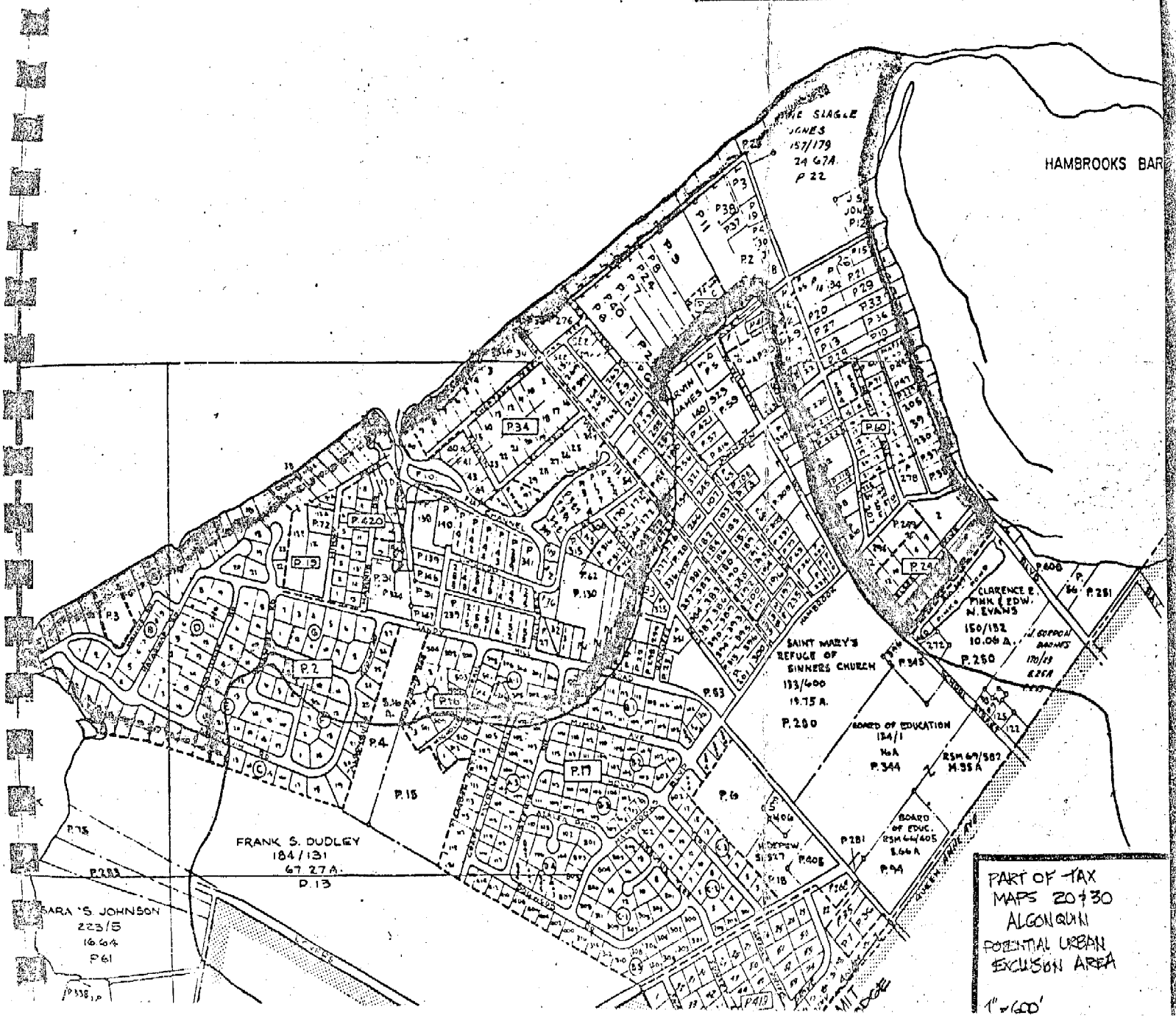

WARWICK ROAD
P.98
GEORGE R. BRYAN, JR. 157/422 20.45A. P.56
P.107
P.10
SECRETARY - SUICIDE
P.196
CORP. LIMIT
ERNEST HOLLAND WHM 1/395 40 A. P.12
188/110
MERRICK
MYRTLE AVE.
WILLOW
MAIN ST.
WALNUT
MAPLE
POPLAR ST.
LARDEN ST.
SECOND ST.
P.195
P.78
P.46
P.207
P.6
P.4
ALFRED A. DEFANIS 111/385 201/37 16.84A. P.5
SECRETARY
SEE SUPPLEMENTAL MAPS
SCALE 1"=50'
GLADYS APPLEBY BY WILL 5.50 A. P37
P.155
P.83
P.79
P.81
P.80
P.94
SMITH BROTHERS INC. 167/532 22.17 A. P.43
SOUTH ST.
JEAN J. SHUFELT 218/69 24.28A.
P.157
RUTH T. ELLIOTT, ETAL 182/467 41.52 A. P.13
LANE ST.
SHUMAK ST.
CORP.
14
P.88
1"=600'
PART OF TAX MAP 21
POTENTIAL URBAN EXCLUSION AREA
TOWN OF SECRETARY

inclusion of the town's shoreline in the Chesapeake Bay Critical Area would not involve major restrictions on development. The basic requirement would be that development occurs in a manner that ensures the protection of water quality along with the preservation of natural vegetation whenever feasible. Waiver from the 100 foot buffer requirement is allowed if it can be shown that the existing patterns of development prevent the buffer from fulfilling its functions. Such likely would be the case with the town of Secretary.

A similar situation exists with regards to the second case study area, Algonquin Estates, located on tax maps 20 and 30. It is almost entirely developed at a density of 1/2 acre or greater. It thus has more than 1/2 mile of shoreline which is at least 50 percent developed.

From review of the zoning maps for the County and the 1981 County land use map developed by the Department of State Planning, the only other areas eligible for exclusion under the urban exclusion clause would be a few areas along Robinson Neck south of Taylor Island. These areas may be less entirely developed so that more substantial management measures may be needed to meet the requirement for exclusion, which is to demonstrate that imposition of the critical area program would not substantially improve water quality or the conservation of fish and wildlife and plant habitat. Such measures could be adopted as part of the County's Chesapeake Bay Critical Area Program and apply to all the County's shoreline areas whether they were excluded or not, perhaps in the form of a more restrictive shoreline yard requirement applicable countywide.

In conclusion, it can be said that the municipalities in the County and a few shoreline areas in the unincorporated portions of the County could likely be excluded under the Urban Exclusion provisions. However, there is a real


HAMBROOKS BAR
SAINT MARY'S REFUGE OF SINNERS CHURCH
133/600
19.75 A.
P. 280
BOARD OF EDUCATION
134/1
N.A
P. 344
CLARENCE E. FINK & EDW. N. EVANS
150/132
10.06 A.
P. 280
FRANK S. DUDLEY
184/131
67.27 A.
P. 13
SARA S. JOHNSON
223/5
16.64
P61
PART OF TAX MAPS 20 & 30
ALGONQUIN
POTENTIAL URBAN EXCLUSION AREA
1" = 600'

question whether such exclusion would be beneficial given the fact that requirements for intensively developed areas in the Chesapeake Bay Critical Area Program Development criteria are not onerous and the fact that such areas would not be eligible for funding for planning activities from the Chesapeake Bay Critical Area Commission. Even more important is the fact that such areas would also likely be lower in priority for funding from State grant programs.

4. Identification of Potential Extensive Wetland Exclusion Areas

Because tidal wetland areas are extensive in Dorchester County, it was felt that it would be too time consuming to examine each draft critical area boundary map provided by the State (over 350 maps at a scale of 1" = 200 feet) for shoreline areas at least 1000 feet long that were separated from open water by extensive tidal wetlands. The following approach was developed to limit the number of those maps that needed to be examined.

First, areas owned by the State and federal government were eliminated from further consideration as exclusion areas since they are not under the jurisdiction of the County and thus the County would not be developing a management program for such areas anyway.

Second, the zoning classificaiton of areas in the County was analyzed to identify areas that would not be appropriate for exclusion. Areas zoned as business, industrial or R-3 residential districts were considered to permit land use of such intensity that exclusion of such areas would not be consistent with standards for exclusion identified in the Act. Areas zoned conservation also were not considered for exclusion since by such zoning the County has indicated that such areas be maintained in an undeveloped state or other natural values be preserved. Since the established zoning for these areas is substantially consistent with proposed criteria it did not appear worthwhile to exclude such areas. However, should the County wish to pursue exclusion of these areas, the existence of the conservation zone and the protection it affords may in and of itself provide a basis for exclusion. However, as discussed in more detail elsewhere, by excluding areas out of its Chesapeake Bay Critical Area the County may reduce its chances of obtaining

State funding from State programs which may in the future give priority to projects within a county's critical area.

A further step is needed to screen out additional areas that may not be suitable for exclusion. These are areas identified as Habitat Protection Areas in the proposed criteria for local Chesapeake Bay Critical Area Program Development. Such types of areas are considered to be of such significance as fish and wildlife habitat that their exclusion may not be supportable. They include: (1) Areas containing rare and endangered species habitat and exemplary plant communities as identified by the Maryland Natural Heritage Program and formally designated as such by the Department of Natural Resources; (2) Areas containing relatively mature areas of 100 acres or more or forested areas connected with such areas; (3) Areas containing or adjacent to areas containing colonial waterbird nesting sites or waterfowl staging and concentration areas; (4) Areas containing relatively mature riparian forested areas at least 300 feet in width which are designated as breeding areas; (5) Other areas identified by State and federal agencies as important plant or wildlife habitat areas; (6) Areas containing extensive amounts of non-tidal wetlands. In the case of areas containing lesser amounts of non-tidal wetlands, additional management measures as discussed in more detail below may be able to be instituted that would enable such areas to be excluded from the County's Chesapeake Bay Critical Area.

Sufficient information is presently available to identify many of these areas. The State's Natural Heritage Program has identified many areas that contain rare and endangered species habitat and exemplary plant communities and its staff is continuing to undertake field investigation to identify additional sites. The National Wetlands Inventory has mapped the location

of both tidal and non-tidal wetlands and classified them according to a comprehensive system. The U.S. Department of the Interior has inventoried the location of colonial bird nesting sites and is presently updating its information while the Maryland Park, Forest and Wildlife Service has collected information of historic waterfowl staging and concentration areas. Prompted by Commission efforts, information on areas such as extensive forested areas and riparian forested areas used for breeding purposes is presently being developed and should be available in the not too distant future.

One of the most critical factors in determining whether an area is approved for exclusion is determining the width of wetlands that can be considered sufficient to protect water quality and fish, wildlife and plant habitat from the adverse impacts of development in the excluded area.

In identifying exclusion areas located adjacent to wetlands several assumptions must be made:

1) It is assumed the wetlands referenced in the exclusion provision are tidal wetlands designated as State or private wetlands under Title 9 of the Natural Resources Article. It is assumed that it does not refer to submerged aquatic vegetation which is found below the surface of tidal waters.

2) The exclusion provision does not explicitly state that there must be 1000 feet of wetlands between open water and the area to be excluded, just that they are separated by wetlands sufficiently extensive to protect water quality and fish and wildlife habitat. However, if a

definition of extensive wildlife involves a width substantially less than 1000 feet, then a significant portion of the land area adjacent to the wetlands would still have to be included in the County Chesapeake Bay Critical Area with only the most inland portion of the upland area excluded.

3) It is recommended that the term open water be considered to refer to the waters of the Chesapeake Bay and its tributaries and subtributaries within the County's Chesapeake Bay Critical Area up to the point where they become intermittent. Inland ponds greater than one acre in size are also included in the definition of open water because of their value to fish and wildlife. If one is using the draft Chesapeake Bay Critical Area maps to identify the presence of such streams, it is unlikely that streams less than 20 feet will be perceived, particularly if they flow through forested areas. The reason for this is the scale of the State's wetland maps on which the critical areas boundary was delinated are at a scale of 1" to 200 feet. Thus, a water body of 20 feet in width would be indicated by one-tenth of an inch which is about the minimum width to be easily identified on the maps.

4) Since wetlands are considered to be fish and wildlife habitat themselves, present or proposed land uses on lands proposed for exclusion must be conducted in a

manner so as to not adversely affect the wetlands or associated fish and wildlife. Thus, before an area is to be excluded it must be shown that sufficient management measures are in place to ensure that adjacent wetlands and the wetlands beyond them are not adversely affected by existing or proposed use of such lands. Because the tidal wetlands are considered to be important fish and wildlife habitat areas, tidal wetlands themselves will not be eligible for exclusion, only the upland areas separated from open water by extensive areas of tidal wetland.

5) Similarly, if an area that meets the criteria for a potential exclusion area (namely separated from open water by extensive tidal wetlands) contains areas identified as habitat protection areas in the proposed Chesapeake Bay Critical Areas Commission Criteria for Local Critical Area Program Development, then it must be shown that sufficient management measures will be instituted to protect such areas before exclusion of the area will be allowed. Otherwise, it cannot be demonstrated that fish and wildlife habitat will be adequately protected.

6) Finally, to avoid spot exclusions and enable a rational implementation of the County's Chesapeake Bay Critical Area Program, it is recommended that any areas considered for exclusion have a minimum width of at least 1000 feet.

Otherwise, the County's shoreline areas would consist of checkerboard patterns of exclusion and non-exclusion areas and respective County policies or programs for each area would be very difficult to implement in an effective and equitable manner.

The studies reviewed for preparation of this report establish that no precise minimum distance for such a wetlands buffer has been determined. They further state that ability of a wetland to absorb nutrients, toxics and sediment depends on its type, the time of year, whether the wetlands has been previously stressed and the amount of runoff occurring. The time of year is particularly important for tidal fresh marsh which significantly die off in the fall, thus greatly reducing their absorbant ability.

If one applies the criteria that the extensive marsh in question comprises the entire 1000 feet between open water and the potential exclusion area, then, as can be seen from the case study areas described in further detail below, only a small number of areas qualify. This is because of the sinuous nature of the tidal rivers which wind through the County's marsh areas and the convoluted nature of its tidal shorelines. If a lesser amount of marsh acreage is considered (400 feet is the minimum distance estimated as appropriate for most types of marshes) then more areas could be excluded from the critical area. However, under the Act's exclusion provision, this would mean that 600 feet of the upland area would have to be included in the critical area and only the 400 feet furthermost inland would be excluded. Such an exclusion would result in a reduced development density allowed in the area remaining in the critical area since additional shoreline areas would be required in order to provide sufficient land area to meet the one unit/20 acre minimum

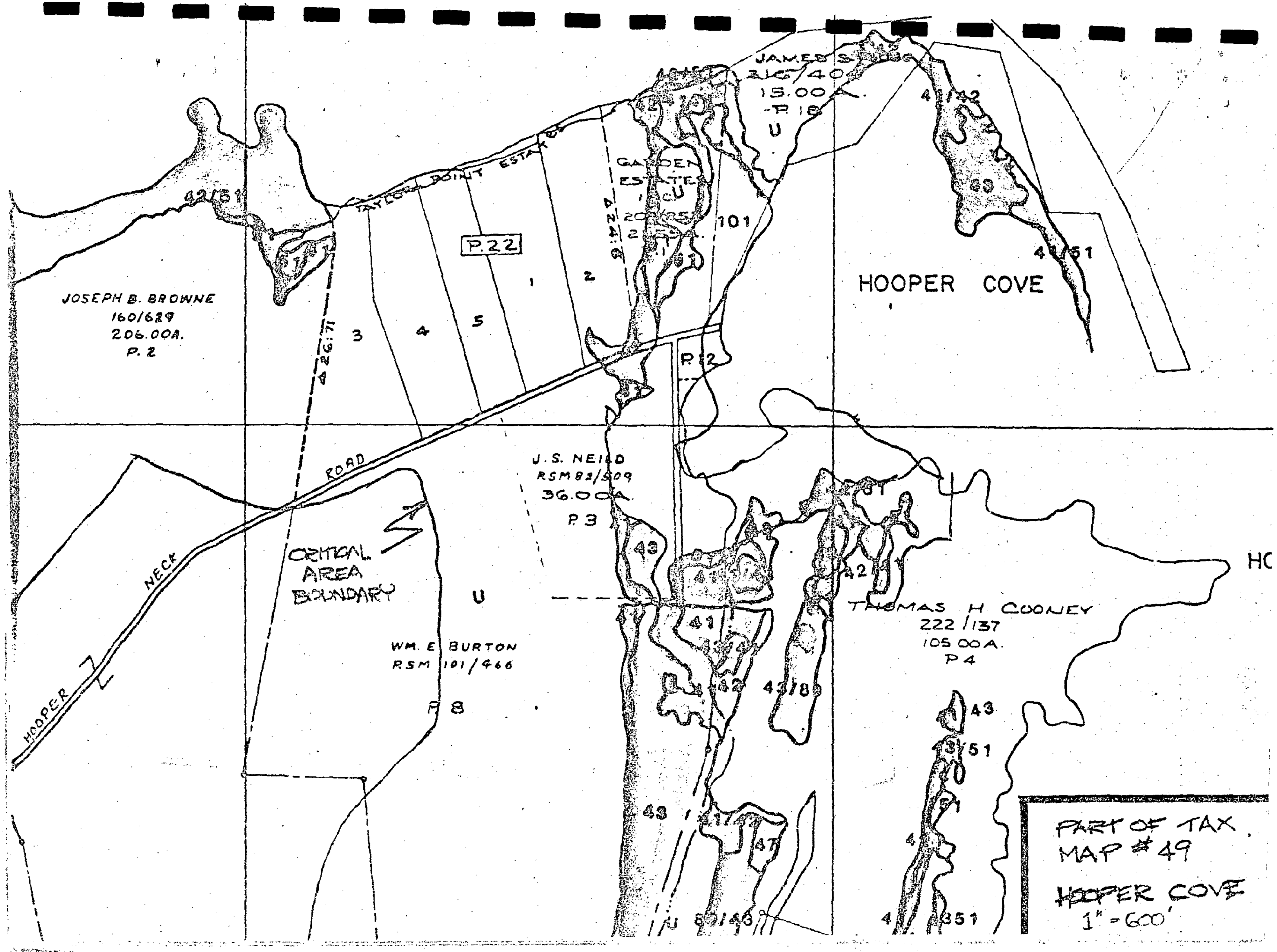
density required by the proposed Critical Areas Program development criteria area.

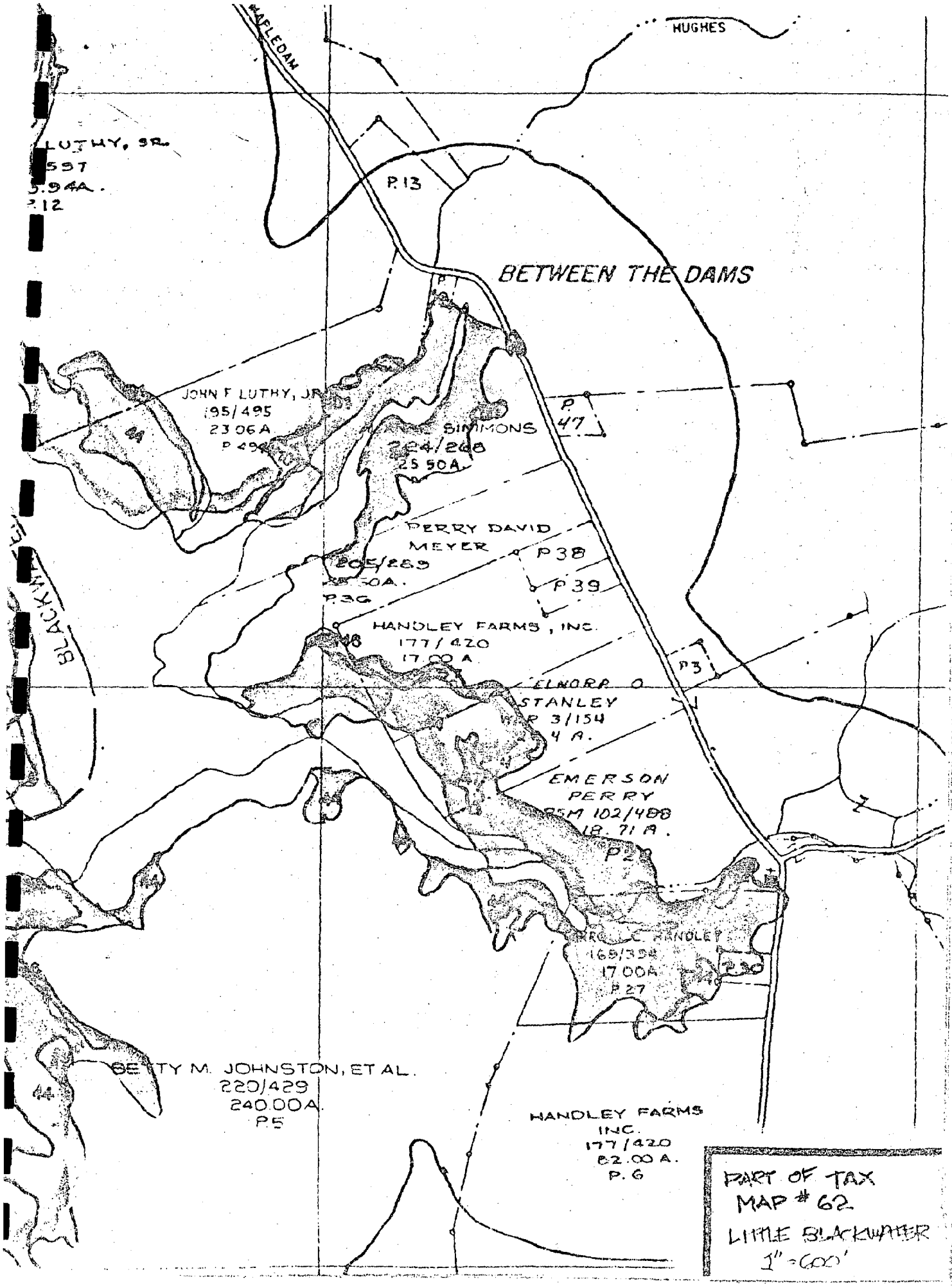
In light of this implication and given the assumption that additional protection measures would be needed at the County level in order to meet the conditions under which an area can be excluded, it becomes questionable whether it is worthwhile for the County to seek the exclusion of such areas from the County's Critical Area. These points can be further illustrated through examination of the case study areas.

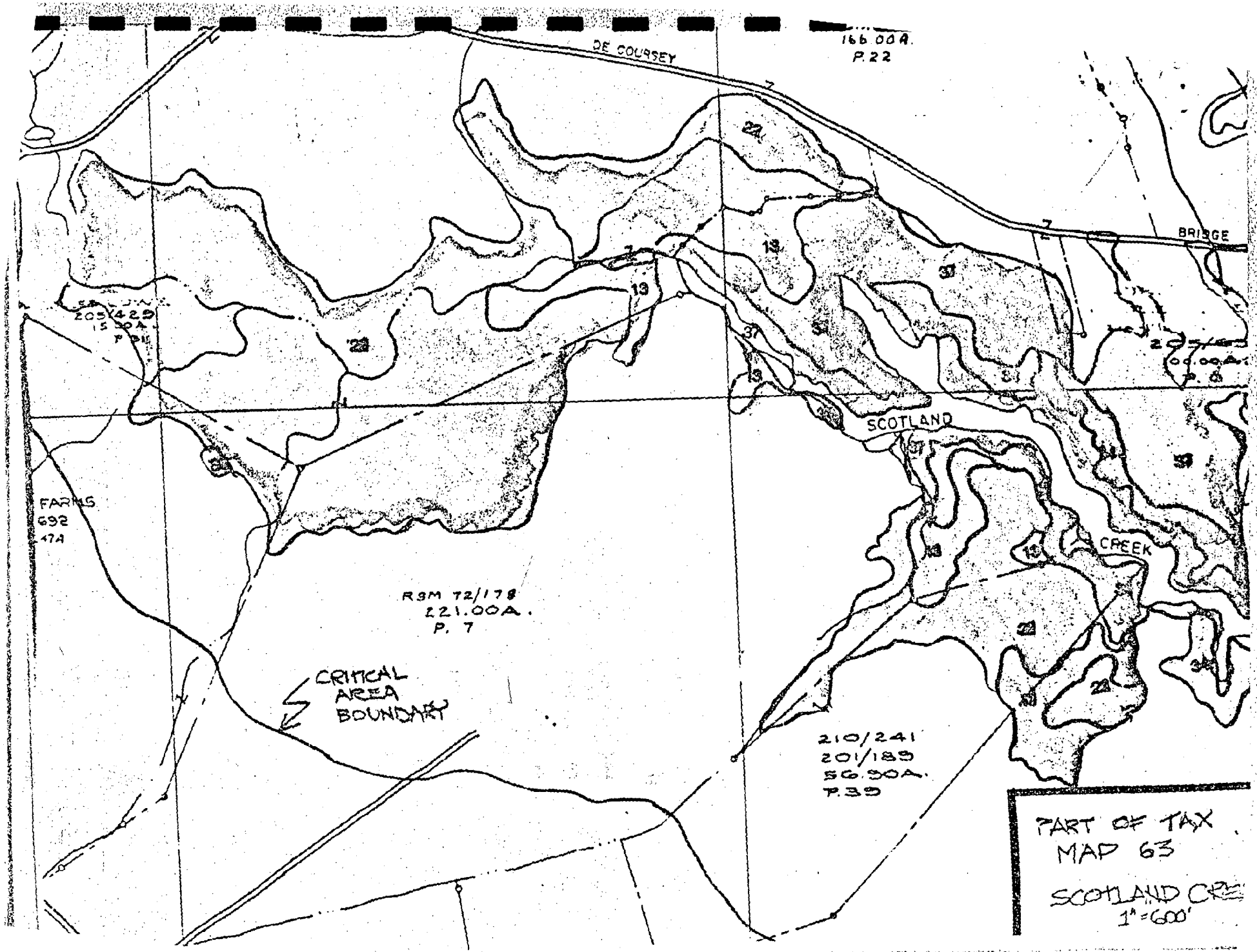
In the case study area shown on tax map 49, the configuration of the wetland areas and their limited aerial extent do not allow any areas to be excluded even if the 400 foot width criteria is used.

In the case study area shown on tax map 63, the areq eligible for exclusion using the 1000 foot criteria would only be a small area south of Scotland Creek plus possibly a small area north of Scotland Creek, depending on where the creek is determined to have become intermittent. Reducing the extensive wetland width criteria to 400 feet does not allow substantial additional area to be included. One additional difficulty with the application of the exclusion provision is illustrated in this case study area. Only a relatively small portion of the total property south of Scotland Creek would be eligible for exclusion making it difficult to determine what additional use of the property excluding the eligible portion would allow.

In the case study area shown on tax map 62 it does not appear that any area would be eligible for exclusion if the 1000 foot width criteria is used. If the 400 foot width criteria is used, an area on the left shoreline of the Little Blackwater River along one of its upland bends would be eligible; the use of this criteria would allow the exclusion of a similar area on


HOOPER COVE
JOSEPH B. BROWNE
160/629
206.00A.
P. 2
TAYLORS POINT ESTATES
P.22
GARDEN ESTATES
101
JAMES S.
316/40
15.00
P 18
J. S. NEILD
RSM 82/509
36.00A.
P 3
P 12
CRITICAL AREA BOUNDARY
ROAD
NECK
HOOPER
WM. E BURTON
RSM 101/466
P 8
THOMAS H. COONEY
222 /137
105.00A.
P 4
PART OF TAX MAP # 49
HOOPER COVE
1" = 600'


MAPLEDAM
HUGHES
LUTHY, SR.
597
.94A.
P.12
P.13
BETWEEN THE DAMS
JOHN F LUTHY, JR.
195/495
23.06A
P 49
SIMMONS
224/268
25.50A
P 47
PERRY DAVID MEYER
205/289
P38
P39
P36
HANDLEY FARMS, INC.
177/420
17.00 A
P3
ELNORA O STANLEY
P 3/154
4 A.
EMERSON PERRY
DSM 102/488
18.71 A.
P2
169/324
17.00A
P27
230
BETTY M. JOHNSTON, ET AL.
220/429
240.00A.
P5
HANDLEY FARMS INC.
177/420
82.00 A.
P. 6
BLACKWATER
44
PART OF TAX MAP # 62
LITTLE BLACKWATER
1" = 600'


DE COURSEY
166.00A.
P.22
BRIDGE
SCOTLAND
CREEK
FARMS
692
47A
RBM 72/178
221.00A.
P. 7
CRITICAL
AREA
BOUNDARY
210/241
201/189
56.50A.
P.39
PART OF TAX
MAP 63
SCOTLAND CR
1"=600'

the river's right shoreline along one of its lower bends. Excluding the latter area many have some utility to the affected property owner since it would allow parcels such as P.38, P.39 and P.3 along Mapledam Road to be developed at a greater density than would otherwise be possible under the development density allowed by the Critical Area Program criteria for areas designated as Resource Conservation.

Finally, with regard to case study area shown on tax map 61, use of the 1000 foot width would not allow any areas to be excluded while use of the 400 foot width would allow upland areas north of where Button Creek becomes an intermitten stream to be excluded.

Because few areas were identified as eligible for exclusion in the case study areas and in consideration of the fact that these sites were chosen because it was thought likely that they would contain exclusion areas, it may not be worthwhile to undertake a more exhaustive effort to identify additional potential exclusion areas. However, from comparison of the areas noted as tidal wetlands areas on the U.S.G.S. quad maps with similar areas on the draft critical area boundary maps, a good concurrence was found. Thus, if the County decides to pursue the identification of potential exclusion areas further, the U.S.G.S. quad maps can be used as a first step in identifying areas where exclusion areas might possible by found. Then, the comparable draft critical area boundary maps can be examined to make more definite determination on whether such areas actually would be eligible for exclusion.

Conclusion:

From the above discussion the following conclusions can be made:

1) The extensive wetlands exclusion provision does not explicitly require that there be 1000 feet of wetlands between a potential exclusion area and open water marsh but that the area be 1000 feet from open water and be bordered by extensive wetlands. However, if the width of the extensive wetland area is less than 1000 feet, then upland areas will have to be included in the critical area. The development density of such areas would be correspondinly less then one unit per 20 acres density that would otherwise be allowed by the proposed critical area program development criteria.

2) There are many fewer areas potentially eligible for exclusion than it would first seem to be the case. This is due to the fact that the sinuous configuration of the County's tidal rivers and its tidal shorelines makes it difficult to find substantial upland areas separated by open water from extensive wetlands. If justification can be found for smaller width wetlands to be considered as sufficiently extensive wetlands to protect water quality and fish, wildlife and plant habitat, then additional areas may be able to be excluded. However, the concerns associated with excluding areas discussed above will still remain.

3) If areas are excluded from the critical area they may become lower in priority for funding under such state programs as the agricultural non-point pollution cost-sharing program, the

Shoreline Improvements Program, Program Open Space, etc. This is particularly important in the case of the agricultural non-point pollution control cost-sharing program because of extensive agricultural land found in the County and the commitment of the Secretary of the Department of Agriculture to give priority to areas in the Chesapeake Bay Critical Area.

4) Since the principal benefit of excluding areas from the provisions of the Act appears to be the potential for greater development density than that allowed by the proposed criteria, then it might be more appropriate for the County to seek to be allowed to designate small portions of its Resource Conservation Areas as Limited Development Areas rather than seeking to exclude areas from its Chesapeake Bay Critical Area.

One final fact that must be kept in mind is that no areas can be excluded from a county's critical area until the critical area management program has been submitted and approved by the Critical Area Commission. In the meantime, all property proposed in the critical area must meet the interim findings requirements of the Chesapeake Bay Critical Areas Act.

In the preparation of this report, a number of points not clearly defined in the Critical Areas Act have required interpretation to permit application of the exclusion provision in Dorchester County. The most important of these points are:

1) Open water is not defined in the statute, although a definition has been provided herein.

2) The Act does not make it clear whether the 1000 feet required between the potential exclusion area and open water must be entirely composed of tidal wetlands and; if not, what an appropriate width of wetlands would be to satisfy the requirements of the exclusion provision.

3) Perhaps most important, no clear measurable standard or test is identified as a basis for review of an exclusion request; only that tidal water quality and fish, wildlife and plant habitats be assured protection from adverse impacts of development in the excluded area.

Given the above uncertainties, any decision to approve a County request for exclusion will ultimately be dependent on the Critical Area Commission's interpretation of what is needed to satisy the requirements of the Critical Area Act.

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