

City of Norfolk

[Chesapeake Bay Preservation Areas Program]

COASTAL ZONE  
INFORMATION CENTER

Virginia Coastal Zone Management Program

TD225.N67C58 1990

Department of City Planning and Codes Administration  
Environmental Affairs  
1990

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Acknowledgement

This program document was funded, in part, by the Virginia Council on the Environment's Coastal Resources Management Program through grant #NA89AA-D-CZ134 of the National Oceanic and Atmospheric Administration under the Coastal Zone Management Act of 1972 as amended.





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Note: Every effort has been made to have Norfolk's Chesapeake Bay Preservation Areas program meet the requirements of the Commonwealth of Virginia. The proposed program described in this document is subject to refinement prior to its final adoption by the Norfolk City Council.

## I. INTRODUCTION

A. Chesapeake Bay Preservation Act and Regulations - The Chesapeake Bay Preservation Act was adopted by the Virginia General Assembly in 1988. The Act created the Chesapeake Bay Local Assistance Board (CBLAB) and charged the Board with developing regulations for use by local governments in the designation of Chesapeake Bay Preservation Areas (CBPAs) and the adoption of development performance standards to improve water quality. The Act requires Tidewater local governments to designate CBPAs and to adopt performance standards consistent with the Board's regulations within one year of adoption of the regulations.

The adoption date of regulations under the Chesapeake Bay Preservation Act is September 20, 1989. The deadline for local adoption of the first year program requirements is September 20, 1990.

The purpose of the Act and Regulations is to protect and improve the water quality of the Chesapeake Bay and its tributaries through local regulation and planning for land use and development. The approach emphasized in the Act and Regulations is to protect water quality by preserving vegetated buffer areas adjacent to the shoreline and requiring the use of on-site stormwater best management practices (BMPs).

The CBLAB is required under the Act to ensure that local governments comply with the Act and regulations. The regulations identify administrative and legal procedures to be followed by the Board in ensuring local compliance. The Chesapeake Bay Local Assistance Department (CBLAD) serves as staff to the Board and is responsible for reviewing local programs and reporting local government progress to the Board. The Board will determine whether local actions are in compliance with the Act, whether to certify local programs, and whether any administrative or legal action should be initiated.

B. First Year Program Proposal - This program proposal was prepared in accordance with guidance provided by the CBLAD and is intended to serve the following purposes:

1. Provide the City Council and City Planning Commission an opportunity to review and comment on City staff's recommendation for Norfolk's program to meet the requirements of the Chesapeake Bay Preservation Act and Regulations.
2. Provide the CBLAD with a basis for determining consistency of Norfolk's proposed program with the requirements of the Act and Regulations.
3. Provide information to the public on the City's proposal for meeting the requirements of the Act and Regulations.



After review and approval of the First Year Program Proposal by the City Council and City Planning Commission, the proposal will be submitted to the CBLAD for their review. The proposal will also be made available to the general public for information and comment. The next steps in the program development process are outlined in detail in Section VI of the proposal.

## II. CHESAPEAKE BAY PRESERVATION AREAS DEFINED

The Chesapeake Bay Preservation Act requires local governments to designate Chesapeake Bay Preservation Areas (CBPAs). These areas include those land features (wetlands and adjacent shoreline areas) which, if improperly developed, would contribute to the significant degradation of water quality in the Bay and its tributaries. The regulations further define these areas as including the following two components - a Resource Protection Area (RPA) and a Resource Management Area (RMA). The regulations provide local governments the option to designate Intensely Developed Areas (IDAs) along the shoreline where development is concentrated and little of the natural environment remains.

The Chesapeake Bay Preservation Area will serve as an overlay zoning district where certain water quality protection criteria will apply to new development and redevelopment. The CBPA in Norfolk and its various components are defined below. (See also Figure 1. CBPA Cross-Section on page 4.)

Chesapeake Bay Preservation Area - Any land designated by the City of Norfolk pursuant to Part III of the Chesapeake Bay Preservation Area Designation and Management Regulations, VR 173-02-01, and Section 10.1-2107 of the Code of Virginia. A Chesapeake Bay Preservation Area shall consist of a Resource Protection Area and a Resource Management Area. If the boundaries of a Chesapeake Bay Preservation Area include a portion of a lot or parcel the entire lot or parcel shall comply with the requirements of the overlay district. The subdivision of property shall not constitute an exemption from this requirement.

Resource Protection Area - That component of the Chesapeake Bay Preservation Area comprised of lands at or near the shoreline that have an intrinsic water quality value due to the ecological and biological processes they perform or are sensitive to impacts which may result in significant degradation to the quality of state waters. The Resource Protection Area includes:

- a. Tidal wetlands;
- b. Nontidal wetlands connected by surface flow and contiguous to tidal wetlands or tributary streams;

c. Tidal shores;

d. A 100-foot vegetated buffer area located adjacent to and landward of the components listed above and along both sides of any tributary stream.

Resource Management Area - That component of the Chesapeake Bay Preservation Area that is not classified as the Resource Protection Area. The Resource Management Area includes land that, if improperly used or developed, has the potential for causing significant water quality degradation or for diminishing the functional value of the Resource Protection Area. The Resource Management Area is adjacent to and landward of the Resource Protection Area and extends landward to include the remainder of a lot or parcel designated as a Resource Protection Area. When the landward boundary of the Resource Protection Area falls within a public right of way, the Resource Management Area is defined as the remainder of the public right of way. (See Figures 2 - 6 on pages 5 - 9.)

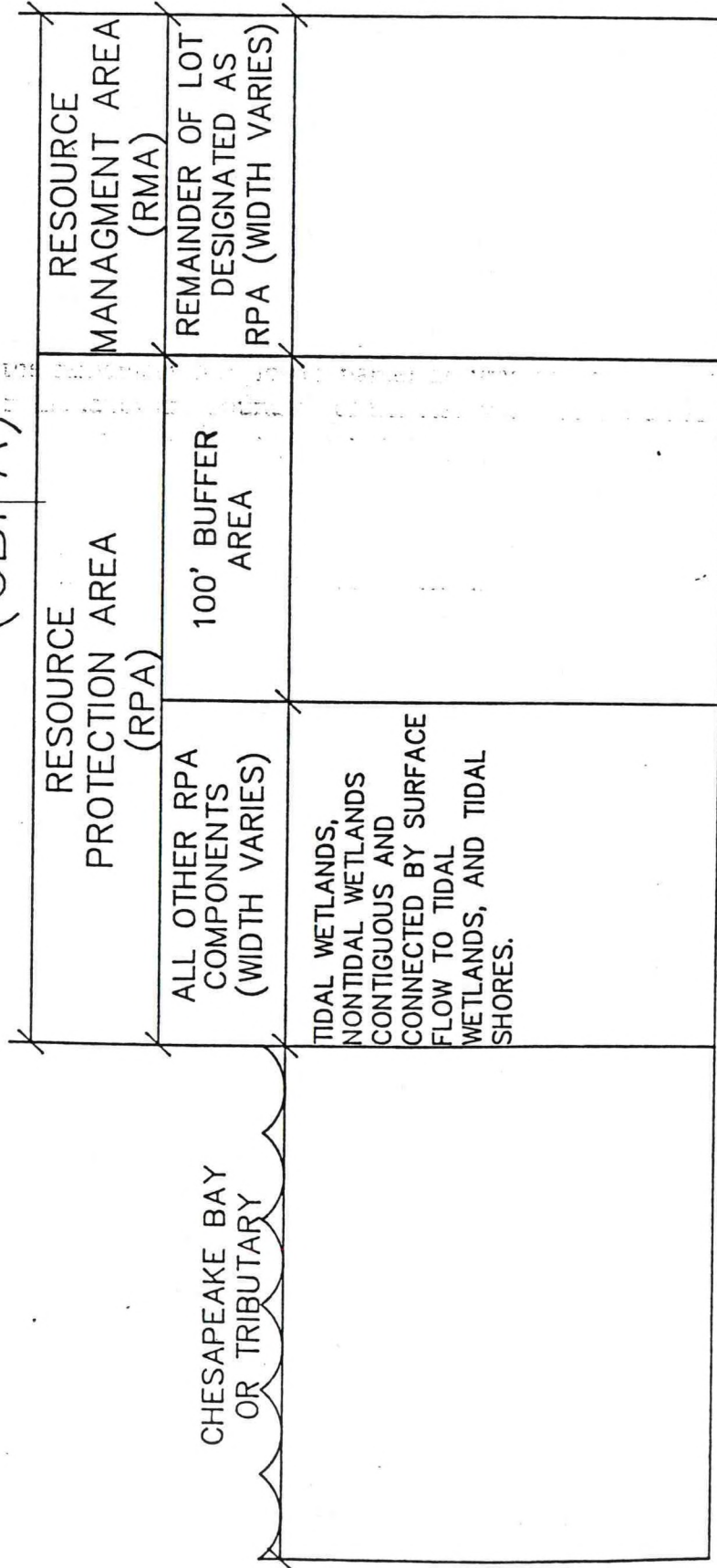
Intensely Developed Area - That portion of the Chesapeake Bay Preservation Area designated by the City of Norfolk where development is concentrated and little of the natural environment remains. The Intensely Developed Area is an overlay district to the Chesapeake Bay Preservation Area in the following areas:

1. The northerly an easterly shoreline of the Elizabeth River and its tributaries from the intersection of the western shoreline of Moseley Creek and the Westminster Avenue Bridge to the intersection of Forty-ninth Street and the Elizabeth River.
2. The southerly shoreline of the eastern branch of the Elizabeth River and its tributaries and the easterly shoreline of the southern branch of the Elizabeth River and its tributaries from the City limit on the Eastern Branch to the City limit on the Southern Branch.
3. The shoreline of the Lafayette and Elizabeth Rivers from the western boundary of the Lochhaven subdivision to the southern boundary of the Norfolk Naval Base.
4. The westerly and northerly shoreline of Little Creek from the shoreline terminus of the western entrance channel jetty to the Shore Drive bridge and the southerly shoreline of Little Creek from the Shore Drive Bridge to the Norfolk City limit.
5. The northerly shoreline of Willoughby Bay from the western intersection of the shoreline with Interstate 64 to the southern shoreline terminus of 15th View Street.



Figure 1. CBPA Cross-Section.

# CHESAPEAKE BAY PRESERVATION AREA (CBPA)



Intensely Developed Area (IDA) is an overlay of all CBPA components.

Figure 2. RMA on lots within existing subdivisions - Scenario 1.

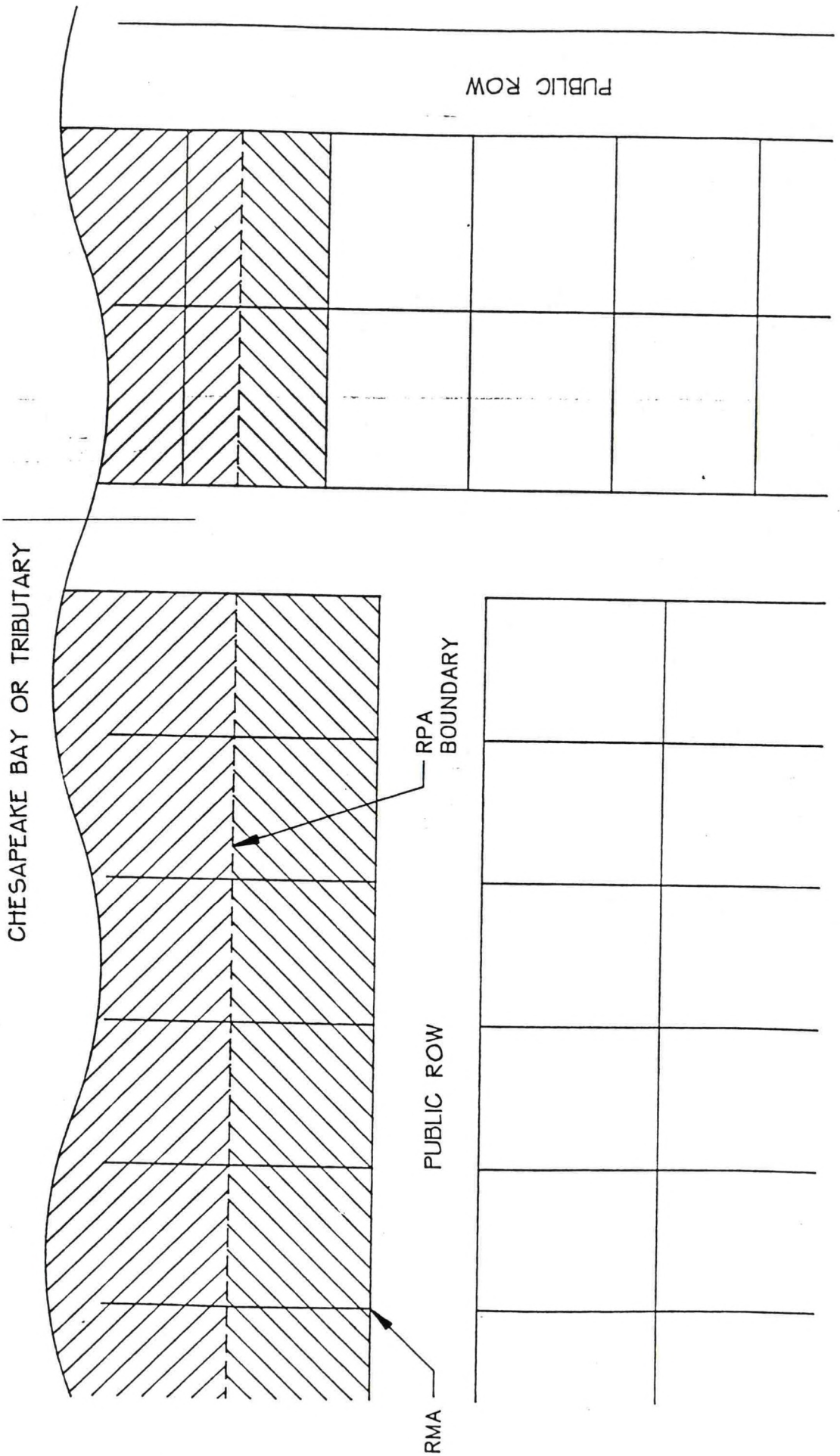


Figure 3. RMA on lots within existing subdivisions - Scenario 2.

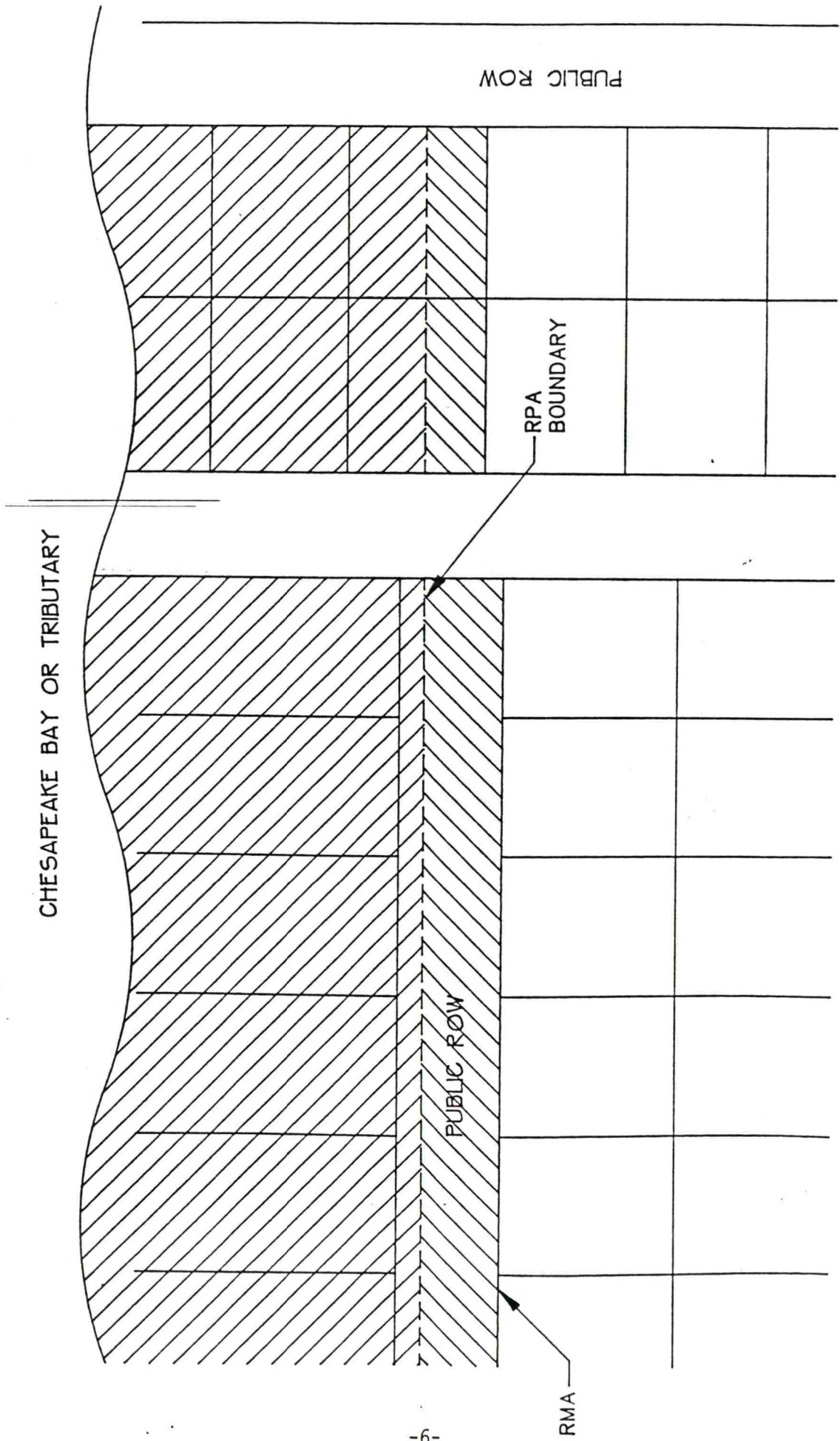




Figure 4. RMA on lots within existing subdivisions – Scenario 3.

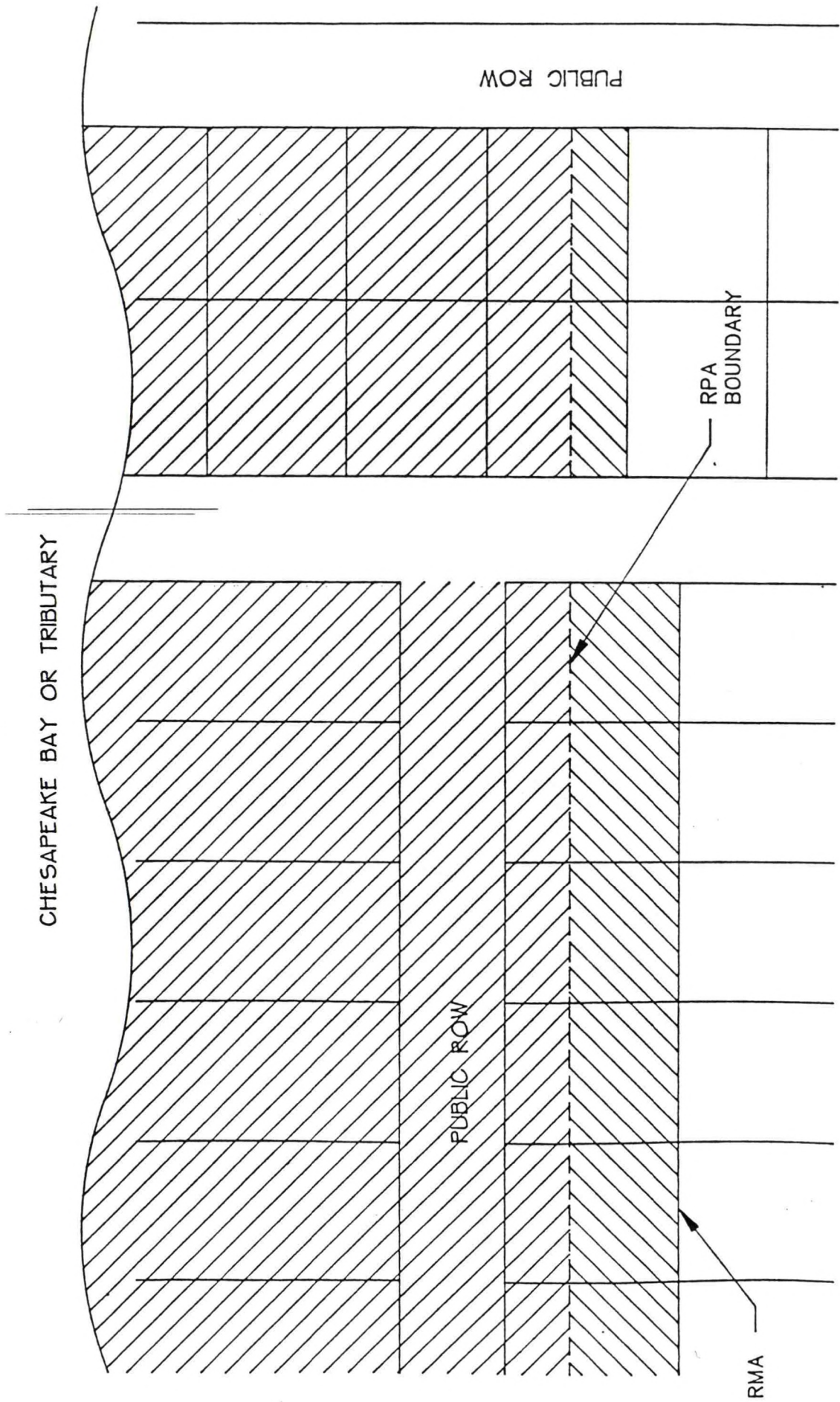




Figure 5. RMA on lots within existing subdivisions - Scenario 4.

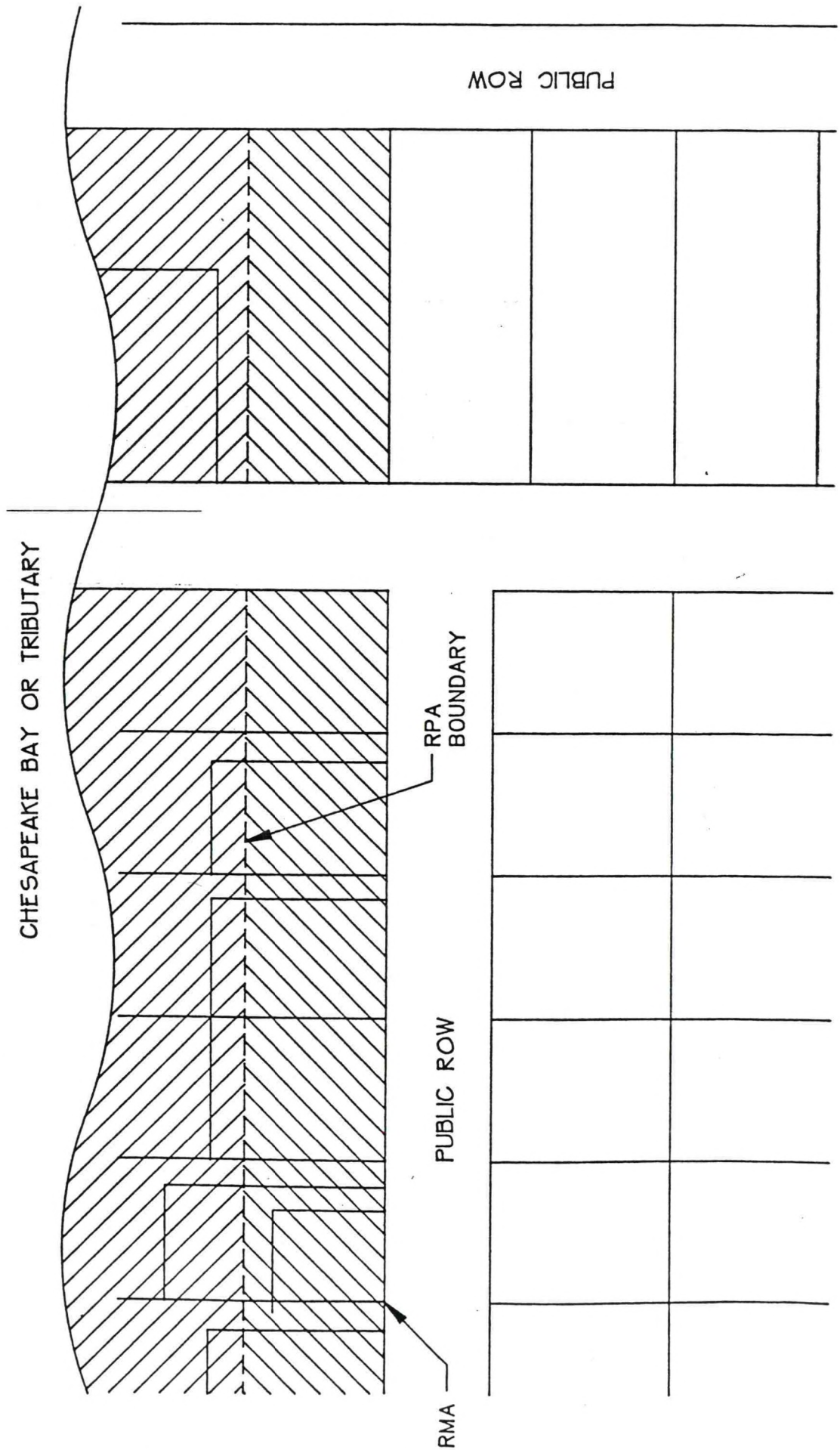
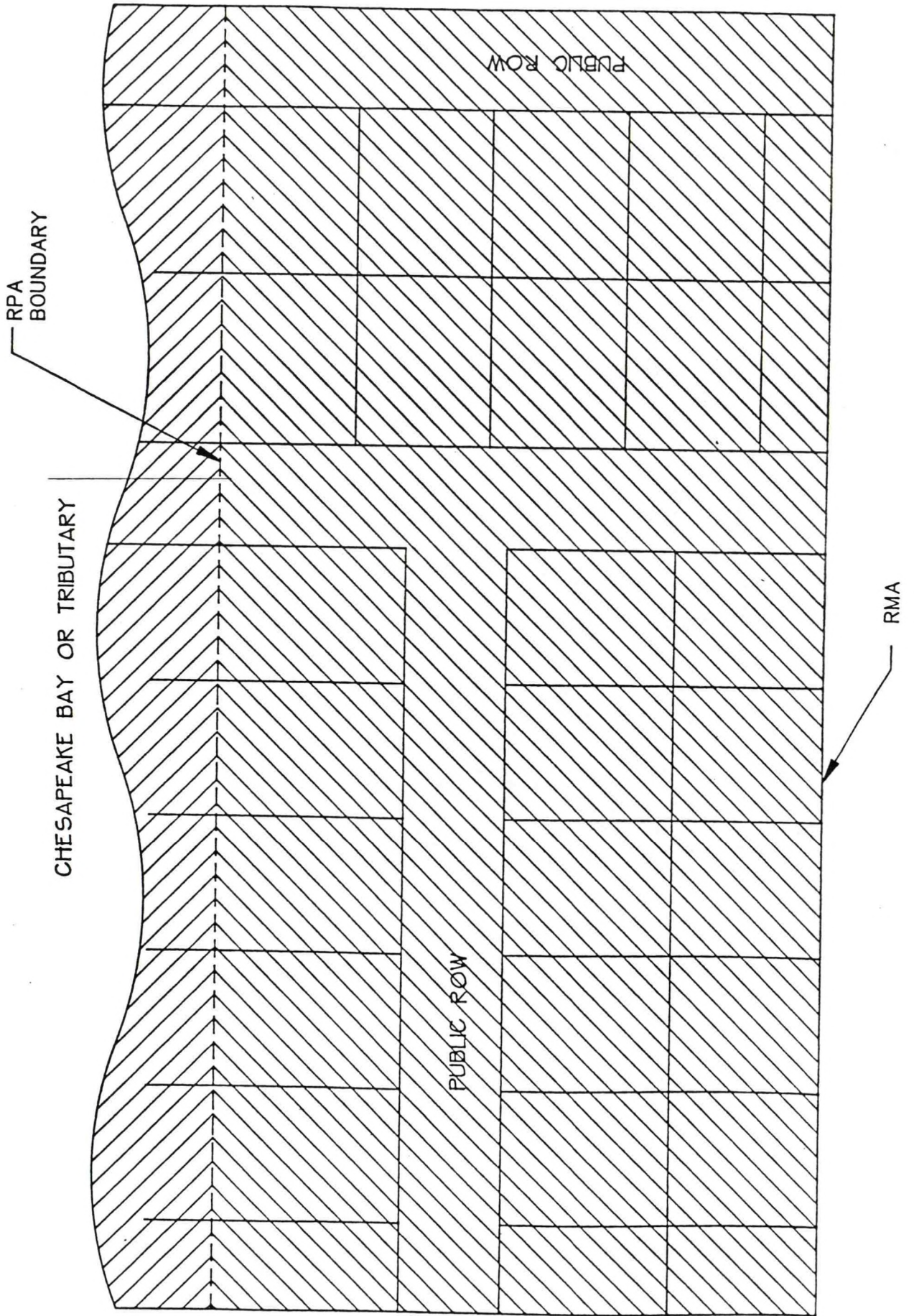


Figure 6. RMA within new subdivisions.





The City's Chesapeake Bay Preservation Areas program will not apply to those federally and state owned lands in the City where local development regulations do not apply. (e.g. Norfolk Naval Base, Virginia Port Authority, etc.) The program will also not apply to the drinking water reservoirs within the City. As part of the City's water utility operation, these reservoirs are currently protected by stormwater management BMPs. Installation of BMPs is already required for new development that drains into the reservoirs.

The definition of CBPAs is resource based, i.e., tidal and nontidal wetlands and tidal shores. For purposes of site planning and development, official designation of CBPAs will occur on a site and/or project specific basis because these natural features do not lend themselves to accurate mapping on City base maps. CBPAs will be mapped at the 1600, 800 and 100 (zoning map) scales for presentation and administrative purposes only. For the purpose of depiction on these maps, CBPAs will be shown as the areas extending landward from the shoreline or wetland to the nearest public street or 500 feet, whichever is less. These maps will depict CBPAs and IDAs but will not depict the RPA and RMA components of CBPAs. Mapping at these scales will allow projects that are likely to be within the CBPA to be easily identified for further site specific verification.

### III. BUFFER AREA REQUIREMENTS SUMMARIZED

Norfolk's Chesapeake Bay Preservation Areas program will promote water quality protection by regulating development within a 100-foot buffer area located adjacent to all tidal shorelines, tidal wetlands and nontidal wetlands that are connected by surface flow and contiguous to tidal wetlands. These features together will form the RPA component of the Chesapeake Bay Preservation Area. (See Figure 1. CBPA Cross Section on page 4.)

Buffer areas are zones of undeveloped, vegetated land that are managed to reduce the impact on water quality of land disturbing activities and development in adjacent areas. Buffer areas can be naturally existing zones of vegetation or planted zones of vegetation, depending upon the character of the site and the extent of site disturbance. Buffer areas provide a wide variety of environmental, aesthetic, and recreational benefits. Benefits that can be derived from the protection of buffer areas include the following:

- o Sediment Control
- o Nutrient Assimilation
- o Outdoor Recreation
- o Aesthetics Protection
- o Shoreline Stabilization
- o Run-off Volume Reduction
- o In-stream Temperature Maintenance
- o Flood Control/Protection
- o Groundwater Recharge Protection

Regulation of development in buffer areas will vary with the type of development being proposed and with site conditions. Buffer area requirements for a variety of development scenarios are outlined below.

New Subdivisions - The regulations will require that new subdivisions provide a full 100-foot buffer area. Only water-dependent uses (e.g. port facilities, ship repair facilities, marinas, etc.) would be permitted within this area. The regulations will provide a mechanism to reduce this distance to 50 feet when the developer provides protection of water quality equivalent to the buffer area through other stormwater best management practices.

In-fill Development and Redevelopment in Existing Subdivisions - The regulations will permit in-fill development and redevelopment within existing subdivisions to occur within the landward 50 feet of the buffer area, if necessary, to provide for sufficient buildable area. If encroachment into the channelward 50 feet of the buffer area is needed in order to maintain a buildable lot, the project may be considered for an exception to the requirements based on the following criteria:

- no more encroachment is allowed than is necessary to provide for sufficient buildable area; and,
- the reduced buffer area provided is consistent with the pattern of existing development.

Development in IDAs - Generally, development in areas designated as Intensely Developed Areas (IDAs) will be exempt from the buffer area requirements. On the few remaining sites within IDAs where a buffer area exists that is providing a water quality protection benefit, development will be required to continue to protect this area or seek changes through a buffer modification process.

Accessory Structures within the Buffer Area - Generally, construction of accessory structures for which a building permit is required and which are not water-dependent (e.g. detached garages, swimming pools, etc.) will not be permitted within the channelward 50 feet of the buffer area.

Additions to Structures within the Buffer Area - Additions to the footprint of existing structures within the buffer area may be eligible for a waiver from the requirements provided that appropriate stormwater best management practices are provided to prevent an increase in pollution from run-off.



In addition to regulating disturbance of the buffer area caused by development activities, Norfolk's program will call for ongoing maintenance of the buffer area by the property owner to ensure that the area will serve a continuing role in water quality protection. Removal of vegetation and certain pruning activities within the buffer area will be regulated through expansion of the City's Tree Ordinance.

#### IV. DEVELOPMENT PERFORMANCE STANDARDS SUMMARIZED

In addition to the buffer area requirements, Norfolk's Chesapeake Bay Preservation Areas program will promote water quality protection through the enforcement of development performance standards. These standards will apply to development within all CBPAs - RPAs, RMAs, and IDAs. The standards will be applied through existing City development ordinances and review procedures, e.g., subdivision review, site plan review, erosion and sediment control reviews, and building permit review.

By definition, the performance standards will not affect the range of uses permitted within a particular area as determined by the underlying zoning. While the standards will not determine what may be developed, they will determine how development can be achieved to maximize water quality protection. The standards, particularly the stormwater management requirements, may affect individual site plans by altering the location or size of buildings or parking areas to allow for provision of sufficient open space and siting of stormwater BMPs to achieve water quality objectives.

The three types of development performance standards (stormwater management, erosion and sediment control, and on-site septic system requirements) are outlined below.

A. Stormwater Management Requirements - The Act and Regulations require implementation of stormwater performance standards that achieve the following:

New Development - no increase in pollution from site run-off based on the average level of pollution from run-off on sites within the watershed.

Redevelopment - a ten per cent reduction in pollution from site run-off based on the level of pollution from run-off on the site prior to redevelopment.

The BMPs that will be required to achieve the stormwater performance standards will vary with site conditions and the type of development proposed. Some typical examples include the following:

- o Maintenance of vegetated areas to filter run-off and promote infiltration of stormwater.

- o Construction of stormwater detention/retention areas to temporarily store the stormwater on-site to allow for pollutant removal.
- o Installation of drainage inlets to allow increased infiltration and pollutant removal prior to discharge into receiving streams.

The City has used the flexibility provided within the Act and Regulations in the following two areas in order to achieve the water quality objectives of the Act while also recognizing the intensity of existing development within the city.

Definition of the Resource Management Area - The RMA has been defined in such a way as to ensure that the development sites from which run-off has a direct impact on the Bay or its tributaries are included. Requirements for on-site stormwater quality BMPs are appropriate for these areas. Upland areas that drain into the city's storm drainage system are typically not included within the RMA definition. Regional or system-wide approaches to stormwater quality improvements are more appropriate for the areas served by the City's drainage system.

Calculation of Pollutant Loadings Based on Average Land Cover Conditions in Norfolk - The City has calculated an average pollutant loading based on development conditions within Norfolk for use in implementing the stormwater performance criteria for new development. This figure will be used in place of the "default loading" suggested by the CBLAD. The CBLAD figure applies to the entire Chesapeake Bay watershed which equates to an average land cover condition of approximately 16 percent impervious or that found on single family residential development at about 1.5 units per acre. Norfolk is much more densely developed than the Bay watershed with an average land cover condition of about 53 percent impervious. Using a pollutant loading based on this figure will result in a more equitable and achievable standard while also satisfying the state criteria. Development for which no BMPs are required by the calculation procedure will be required to implement BMPs that meet a "best available technology" standard given development and site conditions. (The calculation of pollutant loadings based on land cover conditions in Norfolk is detailed in Appendix C.)

The City is participating with other area localities, the Southeastern Virginia Planning District Commission, and the CBLAD in the development of a BMP design manual. The manual will stress identification of BMPs that are appropriate for site conditions in the Hampton Roads area and for small urban commercial and residential site applications. The manual will serve as a tool for local staff and will also be available for use by developers and property owners.



With the assistance of other state agencies, local governments, consulting engineers and representatives of the development community, the CBLAD has developed a calculation procedure for use by local governments in implementing the stormwater performance criteria and in identifying appropriate stormwater controls for different types of development. The CBLAD's recommended nonpoint source calculation procedure will be used by the City to implement the stormwater performance criteria.

B. Erosion and Sediment Control Requirements - With respect to erosion and sediment control requirements (E&S), the City's Chesapeake Bay Preservation Areas program will have the effect of reducing the exemption in the City's current E&S Ordinance from 10,000 square feet of land disturbance to 2,500 square feet including all single family residential construction. E&S control measures are intended to reduce nonpoint source pollution from run-off (primarily sediment) during the land disturbance and construction process. The guidelines for enforcement as outlined in the state's E&S Handbook (as revised and updated) will continue to apply.

C. On-site Septic System Requirements - The City's CBPA program will include provisions to require pump-out of on-site septic systems once every five years. Proper maintenance of the remaining on-site septic systems in the city through periodic pump out requirements will help to ensure the sound operation of these facilities and limit water quality impacts to ground and surface water. The pump-out requirements will be outlined in the City Code and enforced by the Public Health Department. The requirements will apply to all on-site septic systems in the City, not just those in CBPAs. Owners of existing systems will be notified of the new requirements and a data base on existing systems developed and maintained. Available records from the Hampton Roads Sanitation District Commission and the City's Public Health Department will be used to identify the location of existing systems.

## V. PROGRAM ADMINISTRATION

The buffer area requirements and development performance standards will be implemented by the City through existing administrative procedures for development review. Implementation of the City's CBPA program will require a number of modifications to these procedures and will require new or expanded responsibilities within certain City departments. For example, the scope of the site plan review ordinance will be expanded to include all types of development including both residential and non-residential development in CBPAs.

These new responsibilities and modifications in development review procedures are illustrated on the following flow charts.

Administrative Flow Charts:

Sheet 1. Request for Building Permit or Site Plan Review

Sheet 2. Site Plan Review Process (current flow chart)

Sheet 3. Subdivision Review Process

Sheet 4. Request for Rezoning

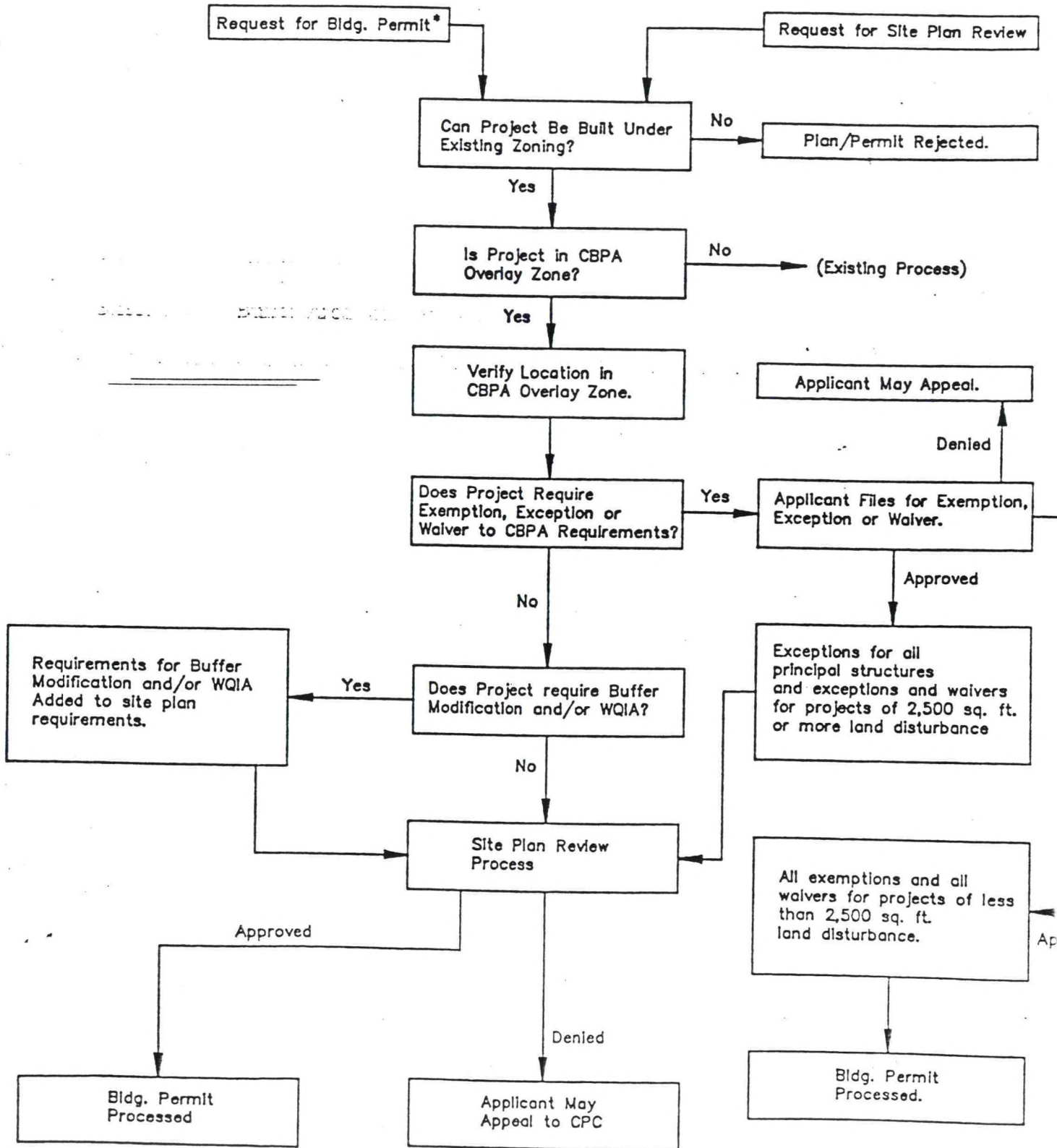
Sheet 5. Request for Fill Permit

Sheet 6. Buffer Area Maintenance Process

Sheet 7. Areas of Responsibility by Department and Division



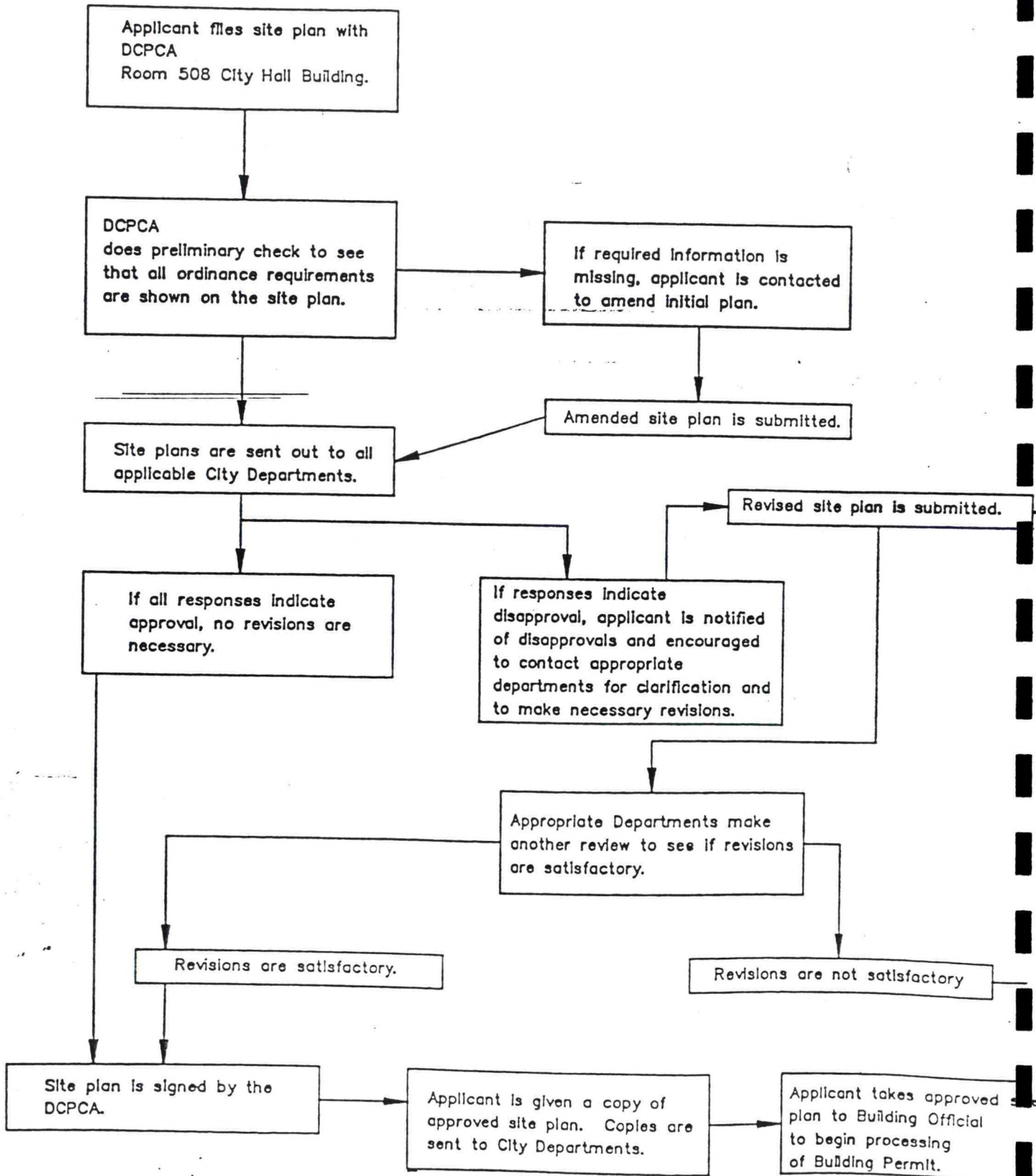
Sheet 1. Request for Building Permit or Site Plan Review



\*New structures (including detached garages, pools, etc.) and additions to the footprint of existing structures.

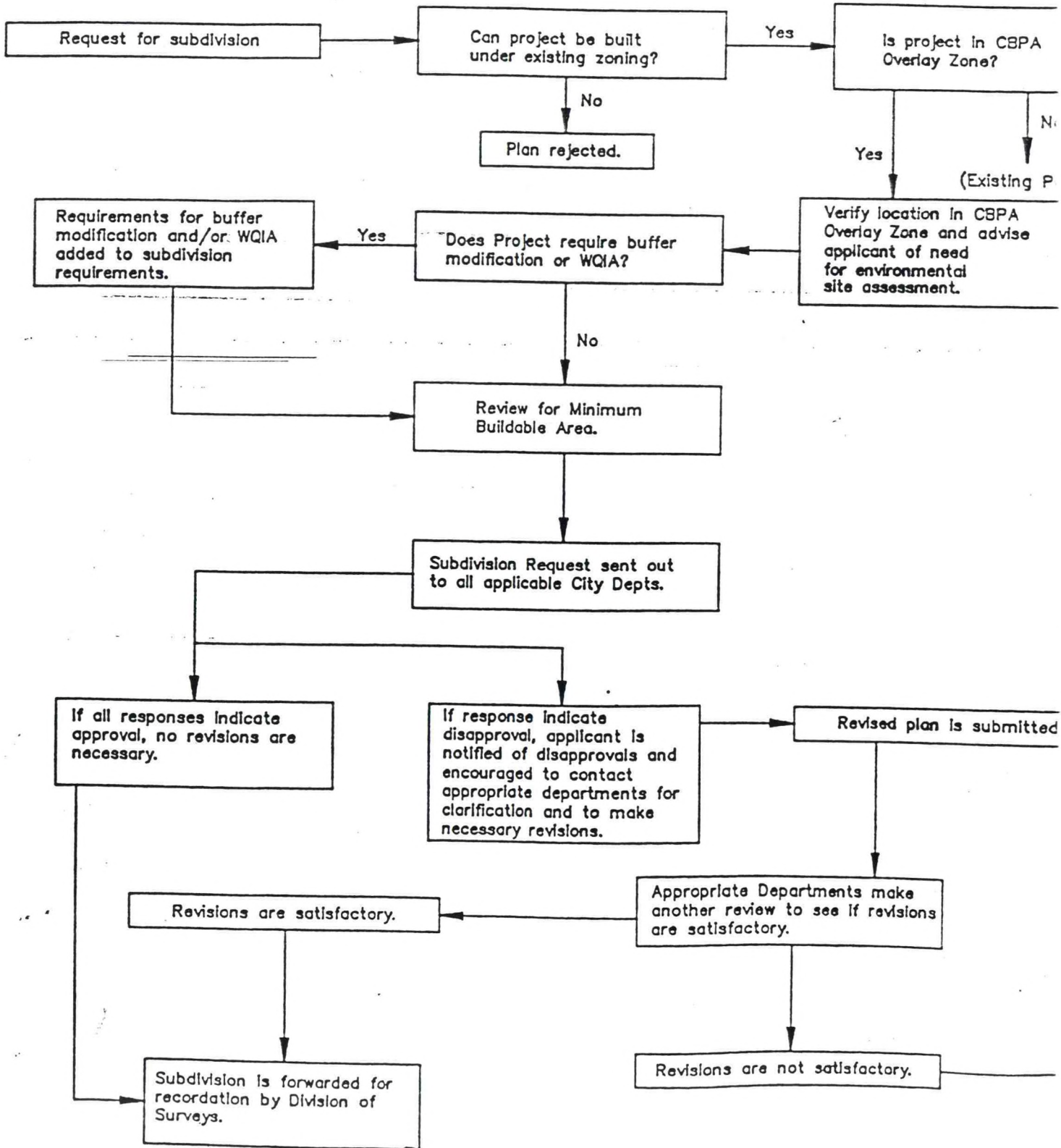
CBPA—Chesapeake Bay Preservation Area; CPC—City Planning Commission; WQIA—Water Quality Impact Assessment

Sheet 2. Site Plan Review Process (current flow chart)



DCPCA—Department of Planning and Codes Administration

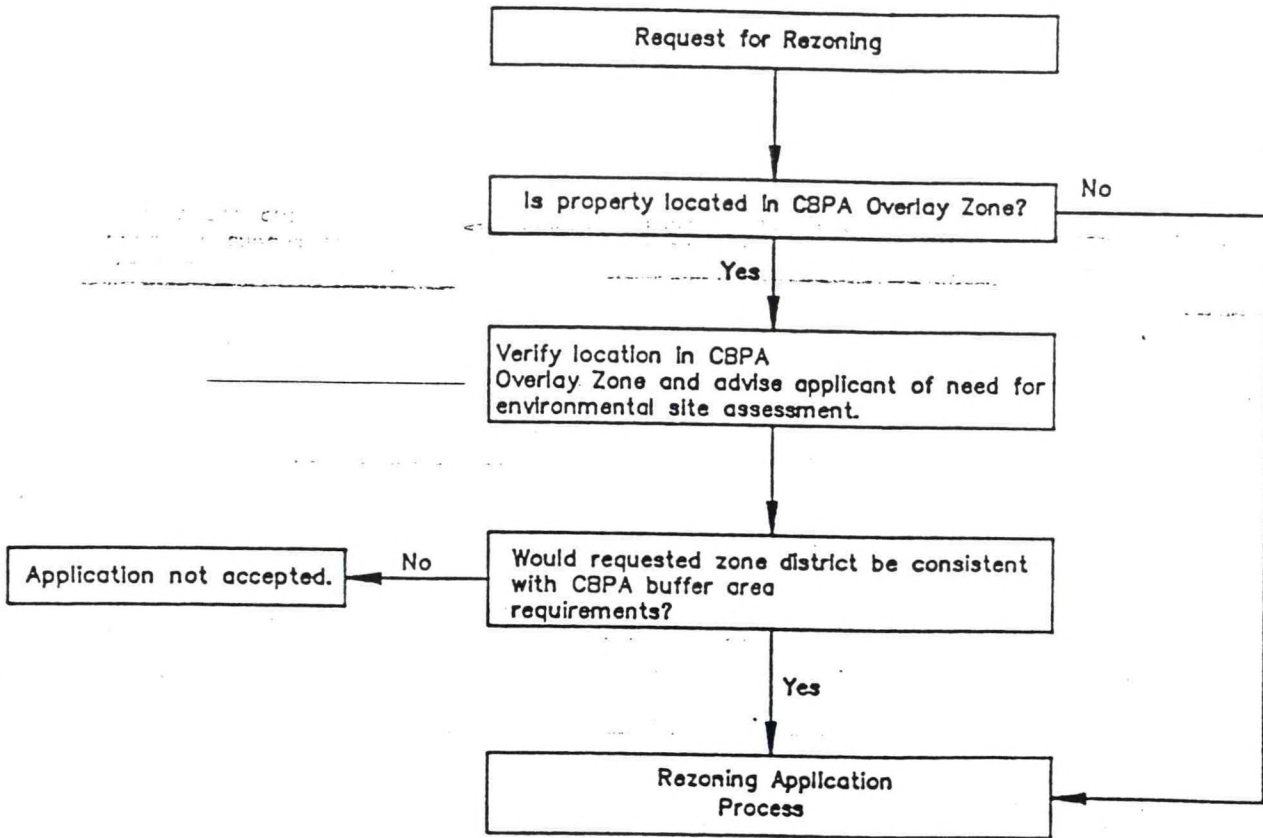
Sheet 3. Subdivision Review Process



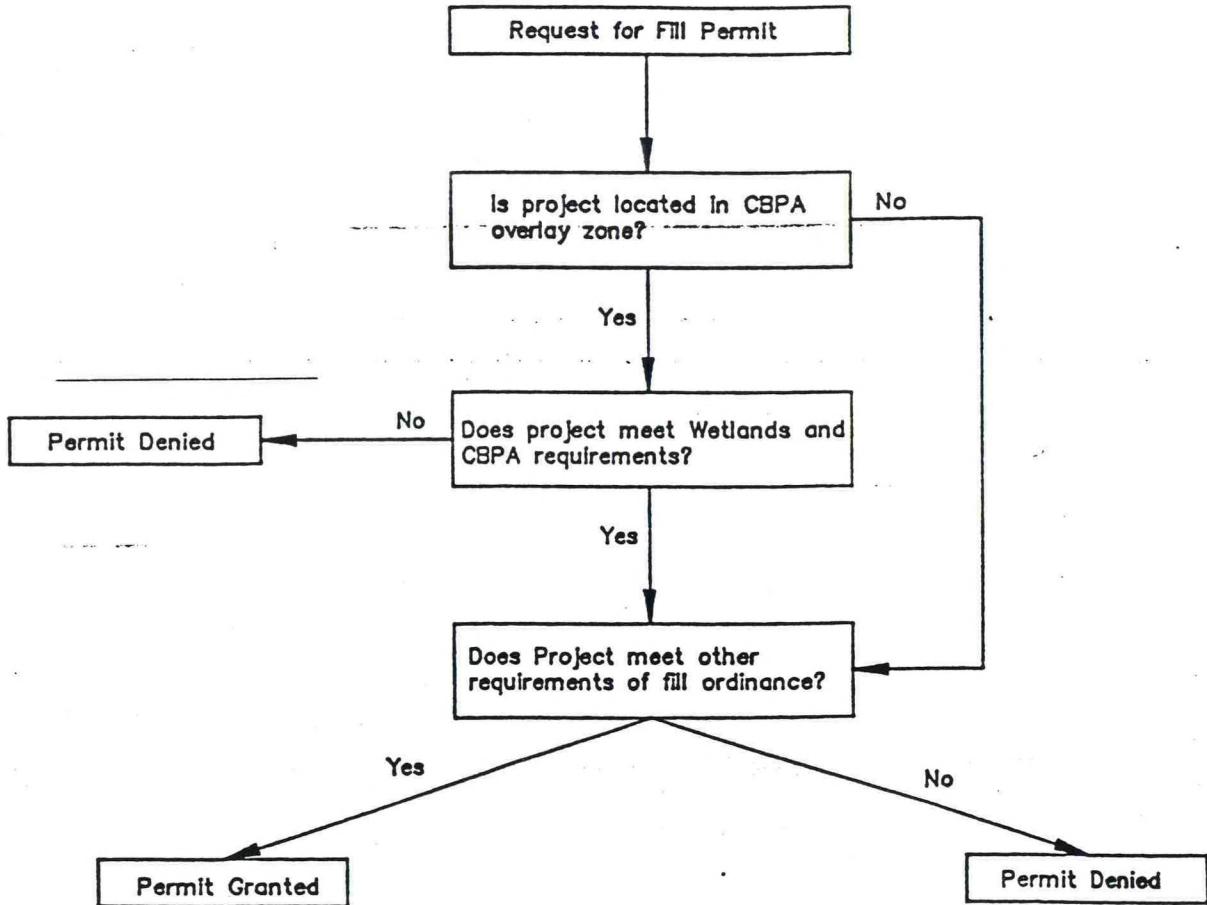
CBPA—Chesapeake Bay Preservation Area; WQIA—Water Quality Impact Assessment



Sheet 4. Request for Rezoning

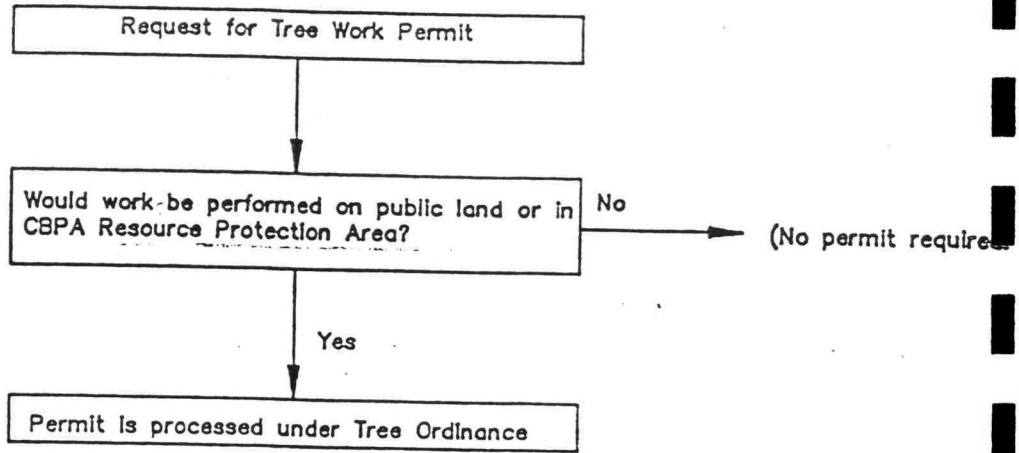


Sheet 5. Request for Fill Permit





Sheet 6. Buffer Area Maintenance Process \*



\* Maintenance of vegetation in the buffer area (pruning and removal) that is not part of the development process (e.g. bldg. permit, request for site plan review or subdivision, erosion and sediment control permit, fill permit, or wetlands permit.)

V. PROGRAM ADMINISTRATION

Administrative Flow Charts:

Sheet 7. Responsibilities by Department and Division

Department of City Planning and Codes Administration

Division of New Construction (NC)

1. Review site plans and building permits for adherence to E&S requirements.
2. Enforce E&S requirements.

Division of Land Use Regulation (LR)

1. Determine if project is located in CBPA overlay zone.
2. Determine if type of building permit requested will require CBPA program review.
3. Coordinate review of applications for exceptions and waivers to CBPA requirements under zoning ordinance as revised per CBPA requirements.
4. Coordinate site plan review process under site plan review ordinance as revised per CBPA requirements.
5. Coordinate subdivision review process under subdivision ordinance as revised per CBPA requirements.
6. Coordinate request for rezoning under zoning ordinance as revised per CBPA requirements.

Division of Environmental Affairs (EA)

1. Verify project location in CBPA overlay zone.
2. Determine if project requires exception or waiver to CBPA requirements. Provide technical input to exception/waiver application review by LR.
3. Determine if project requires buffer modification and/or Water Quality Impact Assessment.



Administrative Flow Charts:  
Sheet 7. (continued)

4. Review site plan for adherence to buffer area requirements.
5. Ensure that necessary wetlands permits have been issued.
6. Coordinate (through periodic site plan review committee meeting) CBPA program element reviews of other depts./divisions and provide CBPA program sign-off to LR as part of site plan, subdivision, and rezoning reviews.

**Department of Public Works**

1. Review site plan and subdivision requests for adherence to stormwater management requirements.
2. Review site plans for adherence to E&S requirements.
3. Enforce stormwater requirements (construction specifications and maintenance requirements) and E&S requirements.
4. Provide technical input to EA in review of exceptions/waivers.

**Department of Parks and Recreation**

1. Review site plans for adherence to landscape requirements.
2. Coordinate buffer maintenance process under Tree Ordinance as revised per CBPA requirements.

**Department of Public Health**

1. Review site plans for adherence to on-site septic system requirements.
2. Coordinate on-site septic system pump-out requirements under City ordinance as revised per CBPA requirements.

## VI. NEXT STEPS IN PROGRAM DEVELOPMENT

The following schedule has been developed based on the requirement in the Act for local program adoption by September 20th.

August 1st - 6th	Public Workshops on First Year Program Proposal
Aug 10th	City Planning Commission Public Hearing
Aug 21st	Update to City Council
Aug 28th	City Council Public Hearing and Action
Sept. 20th	Effective Date of CBPA Requirements
Sept./Oct.	Public Information Program

Once the first year CBPA program has been adopted, the City will begin the process of implementing the second year program requirements. These requirements will involve amendments to the General Plan to include a section on Environmental Quality that will reflect in general policy terms the water quality protection measures adopted as part of the CBPA program. This process is currently underway as part of the overall update to the City's General Plan. The City will also use the second program year to refine the first year requirements based on the experience gained in implementing the program.

## VII. EFFECTIVE DATE OF CBPA REQUIREMENTS

The ordinances adopted by City Council implementing the Chesapeake Bay Preservation Act and Regulations will become effective on September 20, 1990. Once the ordinances become effective, all lots within the Chesapeake Bay Preservation Areas must comply with the new buffer area requirements and the development performance standards.



If a property owner has obtained a building permit and the permitted project is under construction (e.g. building foundations are being put in place) on September 20, 1990, the property owner will be exempt from the new standards relating to the buffer area requirements and the development performance standards.

If a property owner has not obtained a building permit and the project is not under construction on September 20, 1990, the new standards will apply to the lot or parcel. However, for lots recorded before October 1, 1989, a reduction in the buffer area requirement can be obtained to achieve a buildable area for a principal structure and necessary utilities. For lots recorded between October 1, 1989, and September 19, 1990, the full 100-foot buffer width must be observed unless certain stormwater management standards can be achieved or exception and waiver provisions of the zoning ordinance are satisfied.

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For additional information contact the Division of  
Environmental Affairs, 645 Church Street, Suite 303,  
Norfolk, Virginia 23510 - Telephone: 441-2152.

Appendix A - Map 1. Chesapeake Bay Preservation Areas



MAP 1 CHESAPEAKE BAY PRESERVATION AREAS



- Resource Protection Areas (RPA) & Resource Management Areas (RMA)
- ..... Intensely Developed Areas (IDA)
- - - Federal/State Oversight Areas

Appendix B - Chesapeake Bay Preservation Areas Program Ordinances  
Adopted by Council August 28, 1990  
Effective September 20, 1990



Form and Correctness Approved:

Contents Approved:

By Anthony B. Hall  
Office of the City Attorney

By Rumf  
DEPT. City Planning and  
Administration

NORFOLK, VIRGINIA

PH-1

**ORDINANCE No. 36,170**

AN ORDINANCE TO AMEND THE CODE OF THE CITY OF NORFOLK, VIRGINIA, 1979, BY ADDING ONE NEW SECTION NUMBERED 494 UNDER THE ZONING ORDINANCE, SO AS TO IMPLEMENT THE CHESAPEAKE BAY PRESERVATION ACT REGULATIONS.

- - -

BE IT ORDAINED by the Council of the City of Norfolk:

Section 1:- That the Code of the City of Norfolk, Virginia, 1979, is hereby amended by adding thereto under the Zoning Ordinance, relating to the Chesapeake Bay Preservation Area Overlay District, one new section numbered and reading as follows:

494. CBPA: Chesapeake Bay Preservation Area Overlay District.

494.1. Findings of Fact.

The Chesapeake Bay and its tributaries is one of the most important and productive estuarine systems in the world, providing economic and social benefits to the citizens of the City of Norfolk and the Commonwealth of Virginia. The health of the Bay is vital to maintaining the City's economy and the welfare of its citizens.

The Chesapeake Bay waters have been degraded significantly by many sources of pollution, including nonpoint source pollution from land uses and development. These waters are worthy of protection from degradation. Certain lands that are proximate to shorelines have intrinsic water quality value due to the ecological and biological processes they perform. Other lands have severe development constraints from flooding, erosion, and soil limitations. With proper management, they offer significant ecological benefits by providing water quality maintenance and pollution control, as well as flood and shoreline erosion control. These lands together, designated by the City as Chesapeake Bay Preservation Areas (hereinafter "CBPAs"), need to be protected from destruction and damage in order to protect the quality of water in the Bay and consequently the quality of life in the City and the Commonwealth of Virginia.



#### 494.2. Purpose and Intent.

A. This section was enacted to implement the requirements of Section 10.1-2100 et seq. of the Code of Virginia (The Chesapeake Bay Preservation Act) and enacted pursuant to the authority of Section 15.1-489 of the Code of Virginia. The intent of the City and the purpose of the Overlay District is to: (1) protect existing high quality state waters; (2) restore all other state waters to a condition or quality that will permit all reasonable public uses and will support the propagation and growth of all aquatic life, including game fish, which might reasonably be expected to inhabit them; (3) safeguard the clean waters of the Commonwealth from pollution; (4) prevent any increase in pollution; (5) reduce existing pollution; and (6) promote water resource conservation in order to provide for the health, safety, and welfare of the present and future citizens of the City.

B. This district shall be in addition to and shall ~~overlay~~ all other zoning districts where they are applied so that any parcel of land lying in the Chesapeake Bay Preservation Area Overlay District shall also lie in one or more of the other zoning districts provided for by the Zoning Ordinance.

#### 494.3. Definitions.

The following words and terms used in the Overlay District have the following meanings, unless the context clearly indicates otherwise. Words and terms not defined in this Article but defined in Article XI of the Zoning Ordinance shall be given the meanings set forth therein.

1. Best Management Practices or BMPs means a practice, or a combination of practices, that is determined by the City to be the most effective, practical means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.
2. Buffer area means an area of natural or established vegetation managed to protect other components of a Resource Protection Area and state waters from significant degradation due to land disturbances.
3. Buildable Area means the portion of the lot remaining after required yards, buffer areas, and BMP areas have been provided but in no event shall the buildable area be less than 1,200 square feet for lots of over 5,000 square feet. For lots under 5,000 square feet, the minimum buildable area shall be as determined by the zoning administrator.



4. Chesapeake Bay Preservation Area or CBPA means any land designated by the City pursuant to Part III of the Chesapeake Bay Preservation Area Designation and Management Regulations, VR 173-02-01, and Section 10.1-2107 of the Code of Virginia. A Chesapeake Bay Preservation Area shall consist of a Resource Protection Area and a Resource Management Area.
5. Construction footprint means the area of impervious surface including, but not limited to, buildings, roads and drives, parking areas, and sidewalks and the area necessary for construction of such improvements.

6. Development means the construction, or substantial alteration, of residential, commercial, industrial, institutional, recreation, transportation, utility facilities or structures, or public streets, curbs or sidewalks.

7. Impervious cover means a surface composed of any material that significantly impedes or prevents natural infiltration of water into the soil. Impervious surfaces include, but are not limited to: roofs, buildings, streets, parking areas, and any concrete, asphalt, or compacted gravel surface.
8. Infill means utilization of vacant land in previously developed areas or currently developed areas.
9. Intensely Developed Areas or IDAs means a portion of the Chesapeake Bay Preservation Area designated by the City of Norfolk where development is concentrated and little of the natural environment remains. The Intensely Developed Area is an overlay district to the Chesapeake Bay Preservation Area in the following areas:
  - (a) The northerly and easterly shoreline of the Elizabeth River and its tributaries from the intersection of the western shoreline of Moseley Creek and the Westminster Avenue Bridge to the intersection of Forty-ninth Street and the Elizabeth River.
  - (b) The southerly shoreline of the eastern branch of the Elizabeth River and its tributaries and the easterly shoreline of the southern branch of the Elizabeth River and its tributaries from the City limit on the Eastern Branch to the City limit on the Southern Branch.

- (c) The shoreline of the Lafayette and Elizabeth Rivers from the western boundary of the Lochhaven subdivision to the southern boundary of the Norfolk Naval Base.
- (d) The westerly and northerly shoreline of Little Creek from the shoreline terminus of the western entrance channel jetty to the Shore Drive bridge and the southerly shoreline of Little Creek from the Shore Drive Bridge to the Norfolk City limit.
- (e) The shoreline of Willoughby Bay from the western shoreline terminus of Bayville Street to the southern shoreline terminus of 15th View Street.
10. Land Disturbing Activity or Land Disturbance means any land change including but not limited to clearing, grading, excavating, transporting and filling of land, or other construction activities which would disturb the natural vegetation or the existing contours of the land, which may result in soil erosion from water or wind and the movement of sediments into public or private storm drainage systems or waters of the state.
11. Nonpoint source pollution means pollution consisting of constituents such as sediment, nutrients, and organic and toxic substances from diffuse sources such as runoff from land development and use.
12. Nontidal wetlands means those wetlands other than tidal wetlands that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions, as defined by the U.S. Environmental Protection Agency pursuant to Section 404 of the federal Clean Water Act.
13. Redevelopment means the process of developing land that is or has been previously developed.
14. Resource Management Area or RMA means that component of the Chesapeake Bay Preservation Area that is not classified as the Resource Protection Area. RMAs include land types that, if improperly used or developed, have the potential for causing significant water quality degradation or for diminishing the functional value of the Resource Protection Area. The RMA is adjacent to and landward of the Resource



Protection Area and extends landward to include the remainder of the lot or parcel designated as a Resource Protection Area. When the landward boundary of the Resource Protection Area falls within the public right of way, the RMA is defined as the remainder of the public right of way.

15. Resource Protection Area or RPA means that component of the Chesapeake Bay Preservation Area comprised of lands at or near the shoreline that have an intrinsic water quality value due to the ecological and biological processes they perform or are sensitive to impacts which may result in significant degradation to the quality of state waters. The RPA includes wetlands, tidal shores, and a buffer area.
16. Substantial alteration means expansion or modification of the construction footprint.
17. Tidal shore or shore means land or shoreline stabilization structure contiguous to a tidal body of water between the mean low water level and the mean high water level.
18. Tidal wetlands means vegetated and nonvegetated wetlands as defined in Section 62.1-13.2 of the Code of Virginia.
19. Tributary stream means any perennial stream that is so depicted on the most recent U.S. Geological Survey 7-1/2 minute topographic quadrangle map (scale 1:24,000).
20. Utilities means natural gas, electrical power, cable television, telephone, water, stormwater, and sewer service.
21. Water-dependent facility means a development of land that cannot exist outside of the Resource Protection Area and must be located on the shoreline by reason of the intrinsic nature of its operation. These facilities include, but are not limited to (i) ports; (ii) the intake and outfall structures of power plants, water treatment plants, sewage treatment plants, and storm sewers; (iii) marinas and other boat docking structures; (iv) beaches and other public water-oriented recreation areas; and (v) fisheries or other marine resources facilities.
22. Wetlands means tidal and nontidal wetlands.

494.4. Areas of Applicability.

A. The Chesapeake Bay Preservation Area Overlay District shall apply to all lands identified as CBPAs as designated by the City and as shown for administrative and demonstrative purposes on the official zoning map and the 1600 scale Chesapeake Bay Preservation Areas Supplemental map.

1. The Resource Protection Area (RPA) includes:

- (a) Tidal wetlands;
- (b) Nontidal wetlands connected by surface flow and contiguous to tidal wetlands or tributary streams;
- (c) Tidal shores;
- (d) A 100-foot vegetated buffer area located adjacent to and landward of the components listed in subsections a. through c. above, and along both sides of any tributary stream.

2. The Resource Management Area (RMA) includes land that, if improperly used or developed, has the potential for causing significant water quality degradation or for diminishing the functional value of the Resource Protection Area. The Resource Management Area is adjacent to and landward of the Resource Protection Area and extends landward to include the remainder of the lot or parcel designated as a Resource Protection Area. When the landward boundary of the Resource Protection Area falls within the public right of way, the Resource Management Area is defined as the remainder of the public right of way.

B. The official zoning map and the 1600 scale Chesapeake Bay Preservation Areas Supplemental map show the general location of CBPAs and must be consulted by persons contemplating land disturbing activities within the City prior to engaging in such activities.

C. Portions of RPAs and RMAs designated by the City as Intensely Developed Areas (IDAS) shall serve as redevelopment areas. Areas so designated shall comply with all erosion and sediment control requirements and the performance standards for redevelopment in Section 494.10.

D. If the boundaries of a CBPA include a portion of a lot or parcel, the entire lot or parcel shall comply with the



requirements of the Overlay District. The division of property shall not constitute an exemption from this requirement.

**494.5. Use Regulations.**

Principal permitted uses, uses permitted by use permit, accessory uses, and special requirements shall be as established by the underlying zoning district, unless specifically modified by the requirements set forth herein.

**494.6. Lot Size.**

Lot size shall at the minimum be subject to the requirements of the underlying zoning district(s).

**494.7. Required Conditions.**

A. All development and redevelopment exceeding 2,500 square feet of land disturbance including all single family houses, shall be subject to the approval of a site plan in accordance with the provisions of the Site Plan Ordinance (Chapter 32.2) of the City Code.

B. Development in RPAs may be allowed only if it: (i) is water-dependent; or (ii) constitutes redevelopment, provided that the redevelopment results in a 10 percent reduction in nonpoint source pollution.

C. A major water quality impact assessment shall be required for any proposed development or redevelopment within RPAs and for any development within RMAs when required by the director of city planning and codes administration because of the unique characteristics of the site or intensity of development, in accordance with the provisions of Section 32.2-16 of the Site Plan Ordinance (Chapter 32.2).

D. No filling activities shall be conducted in a non-tidal wetlands within an RPA except as provided for in Section 494.12.

**494.8. Conflict with other Regulations.**

In any case where the requirements of the Chesapeake Bay Preservation Area Overlay District conflict with any other provision of the City Code or existing state or federal regulations, whichever imposes the more stringent restrictions shall apply.



**494.9. Interpretation of Resource Protection Area Boundaries**

**A. Delineation by the Applicant.**

The site-specific boundaries of the RPA shall be determined by the applicant through the performance of an environmental site assessment, subject to approval by the director of city planning and codes administration and in accordance with Section 32.2-13 of the Site Plan Ordinance (Chapter 32.2). The official zoning map and the 1600 scale Chesapeake Bay Preservation Areas Supplemental map shall be used as a guide to the general location of Resource Protection Areas.

**B. Delineation by the Director of City Planning and Codes Administration.**

At the request of an applicant, the director of city planning and codes administration with the assistance of the division of environmental affairs may elect to perform the delineation of the environmental features on the site, e.g. tidal wetlands, tidal shores, and nontidal wetlands connected by surface flow and contiguous to tidal wetlands or tributary streams. The applicant is responsible for incorporating this information into the environmental site assessment.

**C. Where Conflict Arises Over Delineation.**

Where the applicant has provided a site-specific delineation of the RPA, the director of city planning and codes administration with the assistance of the division of environmental affairs will verify the accuracy of the boundary delineation. In determining the site-specific RPA boundary, the director of city planning and codes administration may render adjustments to the applicant's boundary delineation. In the event the adjusted boundary delineation is contested by the applicant, the applicant may seek relief by appealing such administrative decision to the City Planning Commission. Appellants shall be given a reasonable opportunity to present their case to the City Planning Commission and to submit technical evidence to support their case. The director of city planning and codes administration may submit technical data and information to the City Planning Commission to support his decision.

**494.10. Performance Standards.**

**A. Purpose and Intent.**

The performance standards establish the means to minimize erosion and sedimentation potential, reduce land application of nutrients and toxics, and maximize rainwater infiltration. Natural ground cover, especially woody vegetation, is most effective in holding soil in place and preventing site erosion. Indigenous vegetation, with its adaptability to local conditions without the use of harmful fertilizers or pesticides, filters storm water runoff. Minimizing impervious cover enhances rainwater infiltration and effectively reduces storm water runoff potential.

The purpose and intent of these requirements are also to implement the following objectives: prevent a net increase in nonpoint source pollution from new development and achieve a 10 percent reduction in nonpoint source pollution from redevelopment.

B. General Performance Standards for Development and Redevelopment.

1. Land disturbance or land disturbing activity shall be limited to the area necessary to provide for the desired use, development or redevelopment.
2. Indigenous vegetation shall be preserved to the maximum extent possible consistent with the use, development and redevelopment permitted and in accordance with the Virginia Erosion and Sediment Control Handbook, 1988, as amended.
3. Land development or redevelopment shall minimize impervious cover to promote infiltration of storm water into the ground consistent with the use, development or redevelopment permitted.
4. Notwithstanding any other provisions of this section or exceptions or exemptions thereto, any land disturbance or land disturbing activity exceeding 2,500 square feet, including construction of all single-family houses, septic tanks, and drainfields, shall comply with the requirements of the Erosion and Sediment Control Ordinance (Chapter 15) of the City Code.
5. For any development or redevelopment, storm water runoff shall be controlled by the use of best management practices that achieve the following:
  - (a) For development, the post-development nonpoint source pollution runoff load shall not exceed the pre-development load, based on the calculated average land cover



condition of the City as determined by the director of public works;

- (b) For sites within IDAs or other isolated redevelopment sites, the existing nonpoint source pollution load shall be reduced by at least 10 percent. The director of public works may modify this requirement for redevelopment sites that originally incorporated best management practices for storm water runoff quality control, provided the following provisions are satisfied:
- (i) In no case may the post-development nonpoint source pollution runoff load exceed the pre-development load;
  - (ii) Runoff pollution loads must have been calculated and the BMPs selected for the expressed purpose of controlling nonpoint source pollution;
  - (iii) If best management practices are structural, evidence shall be provided that facilities are currently in good working order and performing at the design levels of service. The zoning administrator may require a review of both the original structural design and maintenance plans to verify this provision. A new maintenance agreement may be required to ensure compliance with this provision.
- (c) For redevelopment, both the pre- and post-development loadings shall be calculated by the same procedures. However, where the design data is available, the original post-development nonpoint source pollution loadings can be substituted for the existing development loadings.
8. Prior to any land disturbance or land disturbing activity on any portion of a lot or parcel, all wetlands permits required by federal, state, and local laws and regulations shall be obtained and evidence of such submitted to the zoning administrator. The zoning administrator may exempt from this requirement permits for shoreline stabilization projects.

C. Buffer Area Requirements.



To minimize the adverse effects of human activities on the other components of Resource Protection Areas, state waters, and aquatic life, a 100-foot buffer area of vegetation that is effective in retarding runoff, preventing erosion, and filtering nonpoint source pollution from runoff shall be retained if present and established where it does not exist.

The buffer area shall be located adjacent to and landward of other RPA components and along both sides of any tributary stream. The full buffer area shall be designated as the landward component of the RPA, in accordance with Section 494.4 of the Zoning Ordinance and Section 32.2-13 of the Site Plan Review Ordinance. (Chapter 32.2).

The 100-foot buffer area shall be deemed to achieve a 75 percent reduction of sediments and a 40 percent reduction of nutrients. A combination of a buffer area not less than 50 feet in width and appropriate best management practices which collectively achieve water quality protection, pollutant removal, and water resource conservation at least the equivalent of the full 100-foot buffer area may be employed in lieu of the 100-foot buffer if approved by the director of city planning and codes administration after consideration of a major water quality impact assessment in accordance with Section 32.2-16 of the Site Plan Review Ordinance (Chapter 32.2). Where possible, best management practices shall be located landward of the RPA or in areas that are providing minimal water quality benefits. The siting of these facilities shall be sensitive to the existing water quality benefits of buffer areas and wetlands in a natural condition.

1. When the application of the buffer areas would result in the loss of a buildable area on a lot or parcel recorded prior to October 1, 1989, the zoning administrator may modify the width of the buffer area in accordance with the following criteria:
  - (a) Modifications to the buffer areas shall be the minimum necessary to achieve a reasonable buildable area for a principal structure and necessary utilities;
  - (b) Where possible, an area equal to the area encroaching the buffer area shall be established elsewhere on the lot or parcel in a way to maximize water quality protection; and

(c) The reduced portion of the buffer area shall not be less than 50 feet in width.

2. All development in IDAs is exempt from the buffer area requirement except non-water dependent development on sites where a buffer area exists which is providing a water quality benefit.

**494.11 Nonconforming Use and Development Waivers for Buildings or Structures within Chesapeake Bay Preservation Areas.**

The lawful use of a building or structure which existed on the date of adoption of or which exists at the time of any amendment to the Chesapeake Bay Preservation Area Overlay District and which is in conformity with other provisions of the zoning ordinance but which is not in conformity with the provisions of the Overlay District may be continued in accordance with the following requirements and procedures:

No change or expansion of a building or structure shall be allowed with the exception that:

1. The zoning administrator may grant a nonconforming use and development waiver for structures on legal nonconforming lots or parcels to provide for remodeling, alterations or additions to such nonconforming structures provided that:
  - (a) There will be no increase in nonpoint source pollution load; and
  - (b) Any land disturbance or land disturbing activity exceeding an area of 2,500 square feet complies with all erosion and sediment control requirements of Chapter 15 of the City Code.
2. An application for a nonconforming use and development waiver shall be made to and upon forms furnished by the zoning administrator and shall include the following information:
  - (a) Name and address of applicant and property owner;
  - (b) Legal description of the property and type of proposed use and development;
  - (c) A survey of the dimensions of the lot or parcel, location of buildings and proposed



additions relative to the lot lines, and boundary of the Resource Protection Area; and

(d) Location and description of any existing private water supply or sewage system.

3. A nonconforming use and development waiver shall become null and void twelve months from the date issued if no substantial work has commenced.

**494.12. Exemptions for Chesapeake Bay Preservation Areas.**

**A. Exemptions for Utilities, Railroads, and Public Roads.**

Construction, installation, and maintenance of utilities, railroads and public roads shall be exempt from the Overlay District provided that the zoning administrator finds that:

1. To the degree possible, the location of such utilities, railroads and public roads are outside RPAs;
2. No more land is disturbed than is necessary to provide for the desired installation of utilities, railroads, and public roads;
3. All construction, installation, and maintenance of such utilities, railroads and public roads is in compliance with all applicable state and federal requirements and permits and designed and conducted in a manner that protects water quality; and
4. Any land disturbance or land disturbing activity exceeding an area of 2,500 square feet complies with all erosion and sediment control requirements in Chapter 15 of the City Code.

**B. Exemptions in Resource Protection Areas.**

The following land disturbances or land disturbing activities in Resource Protection Areas may be exempted from the Overlay District: (i) water wells; (ii) passive recreation facilities such as boardwalks, trails, and pathways; and (iii) historic preservation and archaeological activities, provided that it is demonstrated to the satisfaction of the zoning administrator that:

1. Any required permits shall have been issued;

2. Sufficient and reasonable proof is submitted that the intended use will not deteriorate water quality;
3. The intended use does not conflict with nearby planned or approved uses; and
4. Any land disturbance or land disturbing activity exceeding an area of 2,500 square feet shall comply with all erosion and sediment control requirements of Chapter 15 of the City Code.

**494.13. Exceptions.**

A. A request for an exception to the requirements of this Overlay District shall be made in writing to the zoning administrator. It shall identify the impacts of the proposed exception on water quality and on lands within the RPA through the performance of a minor water quality impact assessment. For purposes of this section only, a minor water quality impact assessment shall include a site survey to scale which shows (a) the location of the components of the RPA, including the 100 foot buffer area, (b) the location and nature of the proposed encroachment into the buffer area including type of paving material, areas of land disturbance or land disturbing activity, location of any structures, drives, or impervious cover, and sewage disposal systems or reserve drain field sites, and (c) the type and location of proposed best management practices to mitigate the proposed encroachment. For purposes of this section only, in no event shall the total buildable area be more than 1,200 square feet.

B. The zoning administrator with the assistance of the division of environmental affairs shall review the request for an exception and the water quality impact assessment within 60 days and may grant the exception with such conditions and safeguards as deemed necessary to further the purpose and intent of the Chesapeake Bay Preservation Area Overlay District Ordinance if the zoning administrator finds that:

1. Granting the exception will not confer upon the applicant any special privileges that are denied by this section to other property owners in the Overlay District;
2. The exception request is not based upon conditions or circumstances that are self-created or self-imposed, nor does the request arise from conditions or circumstances either permitted or non-conforming that are related to adjacent parcels;



3. The exception request is the minimum necessary to afford relief;
4. The exception request will be in harmony with the purpose and intent of the Overlay District, and not injurious to the neighborhood or otherwise detrimental to the public welfare; and
5. Reasonable and appropriate conditions are imposed which will prevent the exception request from causing a degradation of water quality.

C. The zoning administrator shall have the authority to request and require submission of full factual data and other supplementary information in order to reach his decision.

D. If the zoning administrator cannot make the required findings or refuses to grant the exception, the zoning administrator shall return the request for an exception together with the water quality impact assessment and written findings and rationale for the decision to the applicant. The applicant may then apply to the Board of Zoning Appeals for a variance as provided in Section 803 of the Zoning Ordinance.

E. The Board of Zoning Appeals shall consider the water quality impact assessment and the findings and rationale of the zoning administrator in determining harmony with the intended spirit and purpose of the Chesapeake Bay Preservation Area Overlay District.

Section 2:- That this ordinance shall be in effect from and after September 20, 1990.

Adopted by Council August 28, 1990  
Effective September 20, 1990

TRUE COPY  
TESTE:

\_\_\_\_\_  
R. BRECKENRIDGE DAUGHTREY, CITY CLERK

BY: \_\_\_\_\_  
DEPUTY CITY CLERK

By Cynthia B. Hall  
Office of the City Attorney

By Rumf  
DEPT. City Planning  
Administrati

NORFOLK, VIRGINIA

**PH-1A**

**ORDINANCE No. 36,171**

AN ORDINANCE TO AMEND THE CODE OF THE CITY OF NORFOLK, VIRGINIA, 1979, BY ADDING NEW LANGUAGE AND NEW SECTIONS TO CHAPTER 32.2, RELATING TO SITE PLAN REVIEW, SO AS TO IMPLEMENT THE CHESAPEAKE BAY PRESERVATION ACT REGULATIONS.

- - -

BE IT ORDAINED by the Council of the City of Norfolk:

Section 1:- That the Code of the City of Norfolk, Virginia, 1979, is hereby amended by inserting Article headings under Chapter 32.2, relating to site plan review, numbered and placed as described by the following:

ARTICLE I. GENERAL PROVISIONS  
(Insert before Sec. 32.2-1)

ARTICLE II. SITE PLAN REVIEW IN NON-CHESAPEAKE BAY PRESERVATION AREAS  
(Insert after Sec. 32.2-10 and before 32.2-11)

ARTICLE III. SITE PLAN REVIEW IN CHESAPEAKE BAY PRESERVATION AREAS  
(Insert after Sec. 32.2-11 and before Sec. 32.2-12)

ARTICLE IV. PROCEDURES FOR SITE PLAN REVIEW  
(Insert after Sec. 32.2-17 and before Sec. 32.2-18)

Section 2:- That the Code of the City of Norfolk, Virginia, 1979, is hereby amended by changing certain language of subsection (a) of Section 32.2-2, relating to purpose and intent, numbered and reading as follows:

(a) Purpose. The purpose of these regulations is to promote orderly development in the City of Norfolk and to insure that such development is done in a manner harmonious with surrounding properties and consistent with the general public welfare.

Section 3:- That the Code of the City of Norfolk, Virginia, 1979, is hereby amended by renumbering current Section 32.2-3, relating to site plan review, to Section 32.2-11, and by inserting a new Section 32.2-3, relating to definitions, each one numbered and reading as follows:



Sec. 32.2-3. Definitions.

1. Best Management Practices or BMPs means a practice, or a combination of practices, that is determined by the City to be the most effective, practical means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.
2. Buffer area means an area of natural or established vegetation managed to protect other components of a Resource Protection Area and state waters from significant degradation due to land disturbances.
3. Chesapeake Bay Preservation Area or CBPA means any land designated by the City pursuant to Part III of the Chesapeake Bay Preservation Area Designation and Management Regulations, VR 173-02-01, and Section 10.1-2107 of the Code of Virginia. A Chesapeake Bay Preservation Area shall consist of a Resource Protection Area and a Resource Management Area.
4. Development means the construction, or substantial alteration, of residential, commercial, industrial, institutional, recreation, transportation, or utility facilities or structures.
5. Director means the director of city planning and codes administration.
6. Intensely Developed Areas or IDAs means a portion of the Chesapeake Bay Preservation Area designated by the City of Norfolk where development is concentrated and little of the natural environment remains. The Intensely Developed Area is an overlay district to the Chesapeake Bay Preservation Area in the following areas:
  - (a) The northerly and easterly shoreline of the Elizabeth River and its tributaries from the intersection of the western shoreline of Moseley Creek and the Westminster Avenue Bridge to the intersection of Forty-ninth Street and the Elizabeth River.
  - (b) The southerly shoreline of the eastern branch of the Elizabeth River and its tributaries and the easterly shoreline of the southern branch of the Elizabeth River and its tributaries from the City limit on the Eastern Branch to the City limit on the Southern Branch.

- (c) The shoreline of the Lafayette and Elizabeth Rivers from the western boundary of the Lochhaven subdivision to the southern boundary of the Norfolk Naval Base.
- (d) The westerly and northerly shoreline of Little Creek from the shoreline terminus of the western entrance channel jetty to the Shore Drive bridge and the southerly shoreline of Little Creek from the Shore Drive Bridge to the Norfolk City limit.
- (e) The shoreline of Willoughby Bay from the western shoreline terminus of Bayville Street to the southern shoreline terminus of 15th View Street.

- 7. Land Distributing Activity or Land Disturbance means any land change including but not limited to clearing, grading, excavating, transporting and filling of land, or other construction activities which would disturb the natural vegetation or the existing contours of the land, which may result in soil erosion from water or wind and the movement of sediments into public or private storm drainage systems or waters of the state.
- 8. Nontidal wetlands means those wetlands other than tidal wetlands that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions, as defined by the U.S. Environmental Protection Agency pursuant to Section 404 of the federal Clean Water Act.
- 9. Redevelopment means the process of developing land that is or has been previously developed.
- 10. Resource Management Area or RMA means that component of the Chesapeake Bay Preservation Area that is not classified as the Resource Protection Area. RMAs include land types that, if improperly used or developed, have the potential for causing significant water quality degradation or for diminishing the functional value of the Resource Protection Area. The RMA is adjacent to and landward of the Resource Protection Area and extends landward to include the remainder of the lot or parcel designated as a resource protection area. When the landward boundary of the resource



protection area falls within the public right of way, the RMA is defined as the remainder of the public right of way.

11. Resource Protection Area or RPA means that component of the Chesapeake Bay Preservation Area comprised of lands at or near the shoreline that have an intrinsic water quality value due to the ecological and biological processes they perform or are sensitive to impacts which may result in significant degradation to the quality of state waters. The RPA includes wetlands, tidal shores, and a buffer area.
12. Substantial alteration means expansion or alteration of the construction footprint.
13. Tidal shore or shore means land or shoreline stabilization structure contiguous to a tidal body of water between the mean low water level and the mean high water level.
14. Tidal wetlands means vegetated and nonvegetated wetlands as defined in Section 62.1-13.2 of the Code of Virginia.
15. Tributary stream means any perennial stream that is so depicted on the most recent U.S. Geological Survey 7-1/2 minute topographic quadrangle map (scale 1:24,000).
16. Wetlands means tidal and nontidal wetlands.

**Sec. 32.2-11. Site plan review; when required in a Non-Chesapeake Bay Preservation Area.**

Site Plan review shall be required for the following when located outside of a Chesapeake Bay Preservation Area:

(a) The provisions of Article I of this chapter shall apply to all duplex, semidetached, attached, and multiple dwellings and lodgings as defined in Sections 1123.1 and 1123.2 of the Zoning Ordinance of the City of Norfolk, as amended, including condominium units.

(b) Where a change of use or an increase in density of an existing structure requires additional parking, a site plan and landscape plan shall be

submitted for review to insure that the change of use can be accomplished within the purpose and intent of this chapter, except when such requirement is waived as provided in Section 32.2-18(b).

Section 4:- That the Code of the City of Norfolk, Virginia, 1979, is hereby amended by adding certain new language and renumbering current Sections 32.2-11, 32.2-12, 32.2-13, and 32.2-14, all relating to general site plan review procedures, to Section 32.2-18, 32.2-19, 32.2-20, and 32.2-21 respectively, and by inserting new Sections 32.2-12, 32.2-13, 32.2-14, 32.2-15, 32.2-16 and 32.2-17, relating to site plan review in Chesapeake Bay Preservation Areas, all numbered and reading as follows:

**Sec. 32.2-12. Site plan review; when required in a Chesapeake Bay Preservation Area.**

Any development or redevelopment in a Chesapeake Bay Preservation Area, excluding accessory structures under 2,500 square feet of land disturbance, shall be accomplished through site plan review prior to any land disturbance or land disturbing activity on the site or issuance of any fill or building permit.

In addition to the general requirements of Article I of this chapter, site plan review shall consist of the plans and studies identified below. These required plans and studies may be coordinated or combined, as deemed appropriate by the director. The director may determine that some of the following information is unnecessary due to the scope and nature of the proposed development.

The following plans, studies or permits shall be submitted, unless otherwise provided for:

- (a) A site plan in accordance with the provisions of Article I of this chapter;
- (b) An environmental site assessment;
- (c) A landscape plan;
- (d) A stormwater management plan;
- (e) An erosion and sediment control plan in accordance with the provisions of Chapter 15 of the City Code; and
- (f) A water quality impact statement, when applicable.
- (g) All wetlands permits required by law.



**Sec. 32.2-13. Environmental site assessment.**

An environmental site assessment shall be submitted in conjunction with the site plan.

(a) The environmental site assessment shall be drawn to scale and clearly delineate the following environmental features:

(1) Tidal wetlands;

(2) Tidal shores;

(3) Nontidal wetlands connected by surface flow and contiguous to tidal wetlands or tributary streams;

(4) A 100-foot buffer area located adjacent to and landward of the components listed in subsections (1) through (3) above, and along both sides of any tributary stream.

(5) The RMA and the IDA where applicable.

(b) Wetlands delineations shall be performed consistent with the procedures specified in the Federal Manual for Identifying and Delineating Jurisdictional Wetlands, as amended.

(c) The environmental site assessment shall delineate the site-specific geographic extent of the Resource Protection Area. Turning points in the delineation line shall be referenced to existing landmarks on the site to allow field verification by the division of environmental affairs.

(d) The environmental site assessment shall be drawn at the same scale as the preliminary site plan or subdivision plat, and shall be certified as complete and accurate by a professional engineer, a certified land surveyor or a certified landscape architect.

**Sec. 32.2-14. Landscape plan; additional requirements for Chesapeake Bay Preservation Areas.**

A landscape plan shall be submitted in conjunction with site plan approval. No land disturbance or land disturbing activity on any lot or parcel in a Chesapeake Bay Preservation Area shall be permitted without an approved landscape plan. In addition to the requirements

of Section 32.2-10 of this chapter the plan shall also include the following:

- (a) Within the buffer area, trees to be removed for site lines, vistas, and access paths, shall be shown on the plan. Vegetation required by Sections 30-24(a)(9) and 30-26 of the City Code to replace any existing trees within the buffer area shall also be shown on the landscape plan.
- (b) Trees to be removed for shoreline stabilization projects and any replacement vegetation required by this section shall be shown on the landscape plan.
- (c) The plan shall depict grade changes or other work adjacent to trees which would affect them adversely. Specifications shall be provided as to how grade, drainage, and aeration would be maintained around trees to be preserved.
- (d) The landscape plan shall include specifications for the protection of existing trees during clearing, grading, and all phases of construction in accordance with the provisions of Section 30-26 of the City Code.
- (e) Where areas to be preserved, as designated on an approved landscape plan, are encroached, replacement of existing trees and other vegetation will be achieved at a ratio of one inch in caliper of trees planted to one inch in Diameter Breast Height for trees removed. Trees planted shall be a minimum of 2 to 2.5" caliper class and of a species approved by the Department of Parks and Recreation in accordance with Section 30-24(a)(9) of the City Code.

**Sec. 32.2-15. Stormwater management plan.**

A stormwater management plan shall be submitted as part of the site plan review process.

(a) Contents of the Plan. The stormwater management plan shall contain maps, charts, graphs, tables, photographs, narrative descriptions, explanations, and citations to supporting references as appropriate to communicate the information required by this article and Section 494 of the Zoning Ordinance. At a minimum, the stormwater management plan must contain the following:



- (1) Location and design of all planned stormwater control devices;
- (2) Procedures for implementing non-structural stormwater control practices and techniques;
- (3) Pre- and post-development nonpoint source pollutant loadings with supporting documentation of all utilized coefficients and calculations; and
- (4) For facilities, verification of structural soundness, including a Professional Engineer or Class IIIB Surveyor Certification.

(b) Site specific facilities shall be designed for the ultimate development of the contributing watershed based on zoning, comprehensive plans, local public facility master plans, or other similar planning documents.

(c) All engineering calculations must be performed in accordance with procedures outlined in the current edition of the Local Assistance Manual, Virginia Erosion and Sediment Control Handbook, Virginia Department of Transportation Drainage Manual, or any other good engineering methods deemed appropriate by the department of public works.

(d) The plan shall establish a long-term schedule for inspection and maintenance of stormwater management facilities that includes all maintenance requirements and persons responsible for performing maintenance. If the designated maintenance responsibility is with a party other than the City then a maintenance agreement shall be executed between the responsible party and the City.

**Sec. 32.2-16. Water quality impact assessment.**

A water quality impact assessment shall be required for any development which (i) exceeds 5,000 square feet of land disturbance or land disturbing activity within Chesapeake Bay Preservation Areas and requires any modification or reduction of the landward 50 feet of the 100-foot buffer area; (ii) disturbs any portion of any other component of a resource protection area or disturbs any portion of the buffer area within 50 feet of any other component of a resource protection area; or (iii) is located in a resource management area and is deemed necessary by the director. The information required in this section shall be considered a minimum, unless the

director determines that some of the elements are unnecessary due to the scope and nature of the proposed use and development of land or when the elements of the assessment are duplicative of information submitted in other required plans under this article.

The following elements shall be included in the preparation and submission of a water quality assessment:

- (a) All of the information required for site plan review as specified in Article I and this article;
- (b) A hydrogeological element that:
  - (1) Describes the existing topography, soils, hydrology and geology of the site and adjacent lands.
  - (2) Describes the impacts of the proposed development on topography, soils, hydrology and geology on the site and adjacent lands.
  - (3) Indicates the following (when applicable):
    - A. Disturbance or destruction of wetlands and justification for such action;
    - B. Disruptions or reductions in the supply of water to wetlands, streams, lakes, rivers or other water bodies;
    - C. Disruptions to existing hydrology including wetland and stream circulation patterns;
    - D. Source location and description of proposed fill material;
    - E. Location of dredge material and location of dumping area for such material;
    - F. Location of and impacts on shellfish beds, submerged aquatic vegetation, and fish spawning areas;
    - G. Estimation of pre- and post-development pollutant loads in runoff;



H. Estimation of percent increase in impervious surface on site and type(s) of surfacing materials used;

I. Percent of site to be cleared for project;

J. Anticipated duration and phasing schedule of construction project; and

K. Listing of all requisite permits from all applicable agencies necessary to develop project.

(4) Describes the proposed mitigation measures for the potential hydrogeological impacts. Potential mitigation measures include:

A. Proposed erosion and sediment control concepts including minimizing the extent of the cleared area, perimeter controls, reduction of runoff velocities, measures to stabilize disturbed areas, schedule and personnel for site inspection;

B. Proposed stormwater management system;

C. Creation of wetlands to replace those lost; and

D. Minimizing cut and fill.

(c) A landscape element that in addition to the requirements under 32.2-14 of this article includes a description of the potential measures for mitigation. Possible mitigation measures include:

(1) Replanting schedule for trees and other significant vegetation removed for construction, including a list of possible plants and trees to be used;

(2) Demonstration that the design of the plan will preserve to the greatest extent possible any significant trees and vegetation on the site and will provide maximum erosion control and overland flow benefits from such vegetation; and

- (3) Demonstration that indigenous plants are to be used to the greatest extent possible.
- (d) A wastewater element, where applicable, that:
  - (1) Includes calculations and locations of anticipated drainfield or wastewater irrigation areas;
  - (2) Provides justification for sewer line locations in environmentally-sensitive areas, where applicable, and describes construction techniques and standards;
  - (3) Discusses any proposed on-site collection and treatment systems, their treatment levels, and impacts on receiving watercourses; and
  - (4) Describes the potential impacts of the proposed wastewater systems, including the proposed mitigative measures for these impacts.
- (e) Identification of the natural processes and ecological relationships inherent in the site, and an assessment of the impact of the proposed use and development of land on these processes and relationships.
- (f) As part of the water quality impact assessment submittal, the director may require review by the Chesapeake Bay Local Assistance Department (CBLAD). Upon receipt of the water quality impact assessment, the director will determine if such review is warranted and may request CBLAD to review the assessment and respond with written comments. Any comments by CBLAD will be incorporated into the final review by the director provided that such comments are provided by CBLAD within 90 days of the request.
- (g) Upon the completed review of the water quality impact assessment, the director will determine if the proposed development or redevelopment is consistent with the purpose and intent of this article and with the provisions of 494 of the Zoning Ordinance and make a finding based upon the following criteria:



- (1) Within any RPA, the proposed development is water-dependent;
  - (2) The disturbance of wetlands will be minimized;
  - (3) The development or redevelopment will not result in significant disruption of the hydrology of the site;
  - (4) The development or redevelopment will not result in significant degradation to aquatic vegetation or life;
  - (5) The development or redevelopment will not result in unnecessary destruction of plant materials on site;
  - (6) Proposed erosion and sediment control concepts are adequate to achieve the reductions in runoff and prevent off-site sedimentation;
  - (7) Proposed stormwater management concepts are adequate to control the stormwater runoff to achieve the required standard for pollutant control;
  - (8) Proposed revegetation of disturbed areas will provide optimum erosion and sediment control benefits;
  - (9) The design and location of any proposed drainfield will be in accordance with the requirements of 494 of the Zoning Ordinance;
  - (10) The development or redevelopment as proposed, is consistent with the purpose and intent of 494 of the Zoning Ordinance; and
  - (11) The cumulative impact of the proposed development or redevelopment, when considered in relation to other development in the vicinity, both existing and proposed, will not result in a significant degradation of water quality.
- (h) The director may require additional mitigation where potential impacts have not been

adequately addressed. Evaluation of mitigation measures will be made by the director based on the criteria listed above. The director shall find the proposal to be inconsistent with the purpose and intent of this article and 494 of the Zoning Ordinance when the impacts created by the proposal cannot be mitigated. Evaluation of the impacts will be made by the director based on the criteria listed in subsection (g) above.

**32.2-17. Installation and bonding requirements.**

(a) Where buffer areas, landscaping, stormwater management facilities or other specifications of an approved site plan are required, no certificate of occupancy shall be issued until the installation of required plant materials or facilities is completed, in accordance with the approved site plan.

(b) When the occupancy of a structure is desired prior to the completion of the required landscaping, stormwater management facilities, or other specifications of an approved plan, a certificate of occupancy may be issued only if the applicant provides the City a form of surety satisfactory to the director of parks and recreation and the director of public works in an amount equal to the remaining plant materials, related materials, and installation costs of the required landscaping or facilities and/or maintenance costs for any required stormwater management facilities during the construction period.

(c) All required stormwater management facilities or other specifications shall be installed and approved within 18 months of project commencement. Should the applicant fail, after proper notice, to initiate, complete or maintain appropriate actions required by the approved plan, the surety may be forfeited to the City. The City may collect from the applicant the amount by which the reasonable cost of required actions exceeds the amount of the surety held.

(d) After all required actions of the approved site plan have been completed, the applicant must submit a written request for a final inspection. If the requirements of the approved plan have been completed to the satisfaction of the director of parks and recreation and the director of public works, such unexpected or unobligated portion of the surety held shall be refunded to the applicant or terminated within 60 days following the receipt of the applicant's request for final



inspection. The director may require a certificate of substantial completion from a Professional Engineer or Class IIIB Surveyor before making a final inspection.

**Sec. 32.2-18. Procedures.**

(a) Site plans may be approved administratively by the department of city planning and codes administration, after first circulating the plan and all the attachments to various city departments for written comments.

(b) The department of city planning and codes administration may waive the requirements for site plan review in non-Chesapeake Bay Preservation Areas for additions to existing buildings, structures, or uses if, in their opinion, such addition does not substantially affect the proposed development of adjacent properties.

(c) Each site plan shall be accomplished by a fee of fifty dollars (\$50.00) to cover the cost of examining and processing. Such fee shall be payable to the city treasurer. No additional fee is charged for the landscape plan or other plans required under Article III.

(d) Before filing an application for approval of a site development plan, landscape plan and other applicable plans, the developer is encouraged to confer with the department of city planning and codes administration, and any other city departments regarding the general proposal. Such action does not require formal application fees, or filing of a site development plan, or landscape plan and is not to be construed as an application for formal approval.

**Sec. 32.2-19. Submission of final site plan, landscape plan, and other plans; review and approval.**

(a) After the site development plan, landscape plan, other applicable plans and related materials and fees have been submitted, they shall be reviewed and processed by the department of city planning and codes administration, and other affected city departments for conformity to this ordinance and other applicable regulations. The department of city planning and codes administration will normally act upon the site development plan within thirty (30) working days, unless modification to the plan or other circumstances require additional time. If the plan is approved, the director or his designee, shall certify thereon his approval and state the conditions of such approval, if any. If the

plan is disapproved, he shall indicate his disapproval and the reasons therefor in writing to the applicant.

(b) The action of the department of city planning and codes administration shall be noted on all copies of the site development plan, landscape plan and other applicable plans to be retained in the record, referenced and attached to any changes or conditions determined. One such copy shall be returned to the developer, and others retained as required for records or further action of the department or other affected agencies of the city.

(c) Building permits shall be issued in accordance with approved site development plans. A copy of the approved site plan shall be retained in the records of the building inspector's office and all building and occupancy permits shall conform to the provisions of said site development plan.

(d) Approval of the site development plan, landscape plan and other applicable plans shall be void unless a building permit has been issued or use of the land has commenced within one hundred eighty (180) days from the date of approval. Upon request, revalidation of the site plan may be granted for an additional ninety (90) days if all factors of the original site plan review are the same; provided, however, that written notice requesting revalidation must be received by the city agent prior to expiration of the original one hundred eight (180) day period.

(e) A stop work order shall be put on the project if any improvements required on the approved site development plan, landscape plan or other applicable plans are not adhered to during the development of the site.

(f) When any improvement is to be accepted for dedication, maintenance or operation by the city, the developer may be required to provide a certified check or bond (with surety acceptable to the city attorney) in the amount of ten (10) percent of the total construction costs of the project to cover the costs of any defects which may occur in such improvements within two (2) years after the date of acceptance by the city. The director of public works or public utilities or other responsible city official shall be responsible for determining when such security shall be required.



Sec. 32.2-20. Action by the department of city planning and codes administration.

In considering and acting upon site plans, landscape plans and other applicable plans, the department of city planning and codes administration shall take into consideration the public health, safety, and welfare, the comfort and convenience of the public in general and of the immediate neighborhood in particular. In addition, in Chesapeake Bay Preservation Areas, the department of city planning and codes administration shall consider the criteria in 494 of the Zoning Ordinance.

Sec. 32.2-21. Appeals.

If an application for site plan, landscape plan, and other applicable plan approval is denied, or if a condition deemed unacceptable by the applicant is imposed, the applicant may appeal the action to the city planning commission. The appeal must be submitted in writing and filed within thirty (30) days of the date of notification of the decision being appealed.

Further appeal to the decision of the city planning commission may be submitted in writing to the city council and filed within thirty (30) days after the final decision is rendered by the commission.

Action by city council shall be considered the City's final action and there shall be no further administrative review.

Section 5:- That this ordinance shall be in effect from and after September 20, 1990.

Adopted by Council August 28, 1990  
Effective September 20, 1990

TRUE COPY  
TESTE:

R. BRECKENRIDGE DAUGHTREY, CITY CLERK

BY: \_\_\_\_\_  
DEPUTY CITY CLERK

Form and Correctness Approved:

Contents Approved:

By Cynthia B. Hall  
Office of the City Attorney

By [Signature]  
DEPT. City Planning and  
Administrative

NORFOLK, VIRGINIA

**ORDINANCE No. 36,172**

**PH-1B**

AN ORDINANCE TO AMEND THE CODE OF THE CITY OF NORFOLK, VIRGINIA, 1979, BY ADDING CERTAIN NEW LANGUAGE AND SUBSECTIONS TO CHAPTER 42.5, RELATING TO SUBDIVISIONS, SO AS TO IMPLEMENT THE CHESAPEAKE BAY PRESERVATION ACT REGULATIONS.

BE IT ORDAINED by the Council of the City of Norfolk:

Section 1:- That the Code of the City of Norfolk is hereby amended by adding nine (9) new terms to Section 42.5-2 relating to definitions, reading as follows:

Chesapeake Bay Preservation Area or CBPA means any land designated by the City pursuant to Part III of the Chesapeake Bay Preservation Area Designated and Management Regulations, VR 173-02-01, and Section 10.1-2107 of the Code of Virginia. A Chesapeake Bay Preservation Area consists of a Resource Protection Area and a Resource Management Area. The general limits of the CBPA are shown on the official zoning map and the general requirements pertaining to CBPAs are detailed in Section 494 of the Zoning Ordinance.

Resource Protection Area or RPA means that component of the Chesapeake Bay Preservation Area comprised of lands at or near the shoreline that have an intrinsic water quality value due to the ecological and biological processes they perform or are sensitive to impacts which may result in significant degradation to the quality of state waters. The RPA includes wetlands, tidal shores, and a buffer area.

Buffer area means an area of natural or established vegetation managed to protect other components of a Resource Protection Area and state waters from significant degradation due to land disturbances.

Wetlands means tidal and nontidal wetlands.

Tidal wetlands means vegetation and nonvegetated wetlands as defined in Section 62.1-13.2 of the Code of Virginia.

Nontidal wetlands means those wetlands other than tidal wetlands that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil.



conditions, as defined by the U.S. Environmental Protection Agency pursuant to Section 404 of the federal Clean Water Act.

Tidal shore or shore means land or shoreline stabilization structure contiguous to a tidal body of water between the mean low water level and the mean high water level.

Resource Management Area or RMA means that component of the Chesapeake Bay Preservation Area that is not classified as the Resource Protection Area. RMAs include land types that, if improperly used or developed, have the potential for causing significant water quality degradation or for diminishing the functional value of the Resource Protection Area. The RMA is adjacent to and landward of the Resource Protection Area and extend landward to include the remainder of the lot or parcel as designated as a Resource Protection Area. When the landward boundary of the Resource Protection Area falls within the public right of way, the RMA is defined as the remainder of the public right of way.

Best Management Practices or BMPs means a practice, or a combination of practices, that is determined by the City to be the most effective, practical means of preventing or reducing the amount of pollution generated by non-point sources to a level compatible with water quality goals in accordance with the performance standards of Section 494.10(B)(7) of the Zoning Ordinance.

Intensely Developed Areas or IDAs means a portion of the Chesapeake Bay Preservation Area designated by the City of Norfolk where development is concentrated and little of the natural environment remains. The Intensely Developed Area is an overlay district to the Chesapeake Bay Preservation Area in the following areas:

- (a) The northerly and easterly shoreline of the Elizabeth River and its tributaries from the intersection of the western shoreline of Moseley Creek and the Westminster Avenue Bridge to the intersection of Forty-ninth Street and the Elizabeth River.
- (b) The southerly shoreline of the eastern branch of the Elizabeth River and its tributaries and the easterly shoreline of the southern branch of the Elizabeth River and its tributaries from the City limit on the Eastern Branch to the City limit on the Southern Branch.
- (c) The shoreline of the Lafayette and Elizabeth Rivers from the western boundary of the

Lochhaven subdivision to the southern boundary of the Norfolk Naval Base.

(d) The westerly and northerly shoreline of Little Creek from the shoreline terminus of the western entrance channel jetty to the Shore Drive bridge and the southerly shoreline of Little Creek from the Shore Drive Bridge to the Norfolk City limit.

(e) The shoreline of Willoughby Bay from the western shoreline terminus of Bayville Street to the southern shoreline terminus of 15th View Street.

Section 2:- That the Code of the City of Norfolk, Virginia, 1979, is hereby amended by adding one new subsection to Section 42.5-9 of the Code, relating to preliminary plat requirements in Chesapeake Bay Preservation Areas, numbered and reading as follows:

42.5-9. Preliminary plats and data generally.

(10) In addition to (1)-(9) above, in Chesapeake Bay Preservation Areas, the preliminary plat shall also show the limits of the Resource Protection Area, the Resource Management Area, and the Intensely Developed Area where applicable. In addition, whenever a BMP is required or contemplated on site to reduce or prevent non-point source pollution in accordance with the performance standards set forth in Section 494.10(B)(7) of the Zoning Ordinance, the location, size and configuration of the appropriate BMP shall be shown on the preliminary plat. The siting of the BMP shall be in accordance with Section 494.10(c) of the Zoning Ordinance. If a buffer modification is sought pursuant to the criteria in Section 494.10(C) of the Zoning Ordinance, a minor water quality impact assessment as defined in Section 494.13 of the Zoning Ordinance shall be conducted and submitted.

Section 3:- That the Code of the City of Norfolk, Virginia, 1979, is hereby amended by adding one new subsection to Section 42.5-11 of the Code, relating to final plat requirements in Chesapeake Bay Preservation Areas, numbered and reading as follows:

42.5-11. Final plats and data.

(16) In addition to (1)-(15) above, in Chesapeake Bay Preservation Areas, the final plat shall also show the limits of the Resource Protection Area, the Resource Management Area, and the Intensely Developed Area where



applicable. In addition, whenever a BMP is required or contemplated on site to reduce or prevent non-point source pollution in accordance with the performance standards set forth in 494.10(B)(7) of the Zoning Ordinance, the location, size and configuration of the appropriate BMP shall be shown on the final plat. The siting of the BMP shall be in accordance with Section 494.10(c) of the Zoning Ordinance. If a buffer modification is sought pursuant to the criteria in Section 494.10(C) of the Zoning Ordinance, a minor water quality impact assessment as defined in Section 494.13 of the Zoning Ordinance shall be conducted and submitted.

Section 4:- That this ordinance shall be in effect from and after September 20, 1990.

Adopted by Council August 28, 1990  
Effective September 20, 1990

TRUE COPY  
TESTE:

\_\_\_\_\_  
R. BRECKENRIDGE DAUGHTREY, CITY CLERK

BY: \_\_\_\_\_  
DEPUTY CITY CLERK

Form and Correctness Approved:

Contents Approved:

By

*Cynthia B. Hill*  
Office of the City Attorney

NORFOLK, VIRGINIA

By

*Rung*  
DEPT. City Planning and  
Administration

**PH-1C****ORDINANCE No. 36,173**

AN ORDINANCE TO AMEND THE CODE OF THE CITY OF NORFOLK, VIRGINIA, 1979, BY AMENDING AND ADDING CERTAIN SECTIONS TO CHAPTER 15 OF THE CODE (EROSION AND SEDIMENTATION CONTROL ORDINANCE) SO AS TO IMPLEMENT THE CHESAPEAKE BAY PRESERVATION ACT REGULATIONS.

- - -

BE IT ORDAINED by the Council of the City of Norfolk:

Section 1:- That the Code of the City of Norfolk, Virginia, 1979, is hereby amended by changing certain language and by adding new language under Section 15-1 of the Erosion and Sedimentation Control Ordinance, relating to definitions, reading as follows:

## 15-1. Definitions

1. "Land disturbance" or "Land disturbing activity" is defined as any land change including but not limited to, clearing, grading, excavating, transporting and filling of land, or other construction activities which would disturb the natural vegetation or the existing contours of the land, which may result in soil erosion from water or wind and the movement of sediments into public or private storm drainage facilities or state waters.
2. "Chesapeake Bay Preservation Area" or CBPA is defined as any land designated by the City pursuant to the provisions of Section 494 of the Zoning Ordinance and shown on the official zoning map.
3. "Construction footprint" is defined as the area of impervious surface, including but not limited to buildings, roads and drives, parking areas, sidewalks, and the area necessary for construction of such improvements.

Section 2:- That the Code of the City of Norfolk, Virginia, 1979, is hereby amended by adding one new section under the Erosion and Sedimentation Control Ordinance relating to Chesapeake Bay Preservation Areas, numbered and reading as follows:

## 15.1.1. Chesapeake Bay Preservation Areas.

- (a) Any land disturbance or land disturbing activity exceeding 2,500 square feet, including construction



of all single family houses, shall comply with the applicable provisions of this chapter.

- (b). During construction, and in accordance with an approved site plan, the limits of any land disturbance or land disturbing activity shall be strictly confined to the construction footprint. The limits shall be clearly shown on submitted plans and physically marked on the construction site.
- (c) Ingress and egress during construction shall be limited to one access point unless otherwise approved by the building official.

Section 3:- That the Code of the City of Norfolk, 1979, is hereby amended by adding certain language to the title and first sentence of Section 15-2 under the Erosion and Sedimentation Control Ordinance, relating to exemptions, reading as follows:

15-2. Exemptions from chapter for areas outside the designated Chesapeake Bay Preservation Areas.

The provisions of this chapter shall not apply to the following when located outside the designated Chesapeake Bay Preservation Areas:

Section 4:- That this ordinance shall be in effect from and after September 20, 1990.

Adopted by Council August 28, 1990  
Effective September 20, 1990

TRUE COPY  
TESTE:

\_\_\_\_\_  
R. BRECKENRIDGE DAUGHTREY, CITY CLERK

BY: \_\_\_\_\_  
DEPUTY CITY CLERK

Form and Correctness Approved:

By Cynthia B. Hall  
Office of the City Attorney

NORFOLK, VIRGINIA

By Stanley Stee  
DEPT. Parks and Recreation

PH-1D

**ORDINANCE No. 36,174**

AN ORDINANCE TO AMEND THE CODE OF THE CITY OF NORFOLK, VIRGINIA, 1979, BY ADDING CERTAIN NEW LANGUAGE TO CHAPTER 30 OF THE CODE (TREE ORDINANCE) SO AS TO IMPLEMENT THE CHESAPEAKE BAY ACT REGULATIONS RELATING TO THE MAINTENANCE OF TREES AND SHRUBS IN THE BUFFER AREA OF THE RESOURCE PROTECTION AREA.

BE IT ORDAINED by the Council of the City of Norfolk:

Section 1:- That the Code of the City of Norfolk, Virginia, 1979, is hereby amended by renumbering current Section 30-24(a)(9) to 30-24(a)(10) and by inserting a new Section 30-24(a)(9) thereunder reading as follows:

**30-24. Permits.**

- (a)(9) Plant, prune or remove any tree or portion thereof, or damage, cut, tap, caulk, paint, attach any rope, wire, nail, sign or any other manmade object to any tree or shrub, or dig a tunnel, trench or otherwise excavate or place any foreign material within the dripline of any tree or shrub within the buffer area of the Resource Protection Area as defined and described in Section 494 of the Zoning Ordinance (Chesapeake Bay Preservation Area overlay district). The Director may also approve buffer area vegetation management plans when he has determined that the applicant has presented sufficient information to ensure the objectives of Section 494 of the Zoning Ordinance will be faithfully carried out by the applicant. The Director shall impose such conditions and limitations as would be consistent with the terms and conditions of Section 494 of the Zoning Ordinance. If the permittee fails to carry out the maintenance program within the terms and conditions set forth in the approved management plan, the Director of Parks and Recreation shall revoke the same and take such action as is appropriate to remedy or restore the buffer area. In approving either a single activity permit or a management plan, the Director of Parks and Recreation shall be guided by the following performance standards designed to maintain the



functional value of the buffer area and the indigenous vegetation located therein:

- i. Trees in excess of 6" diameter breast height shall not be pruned or removed except as necessary to provide minimal site lines and vistas and provided that where removed they will be replaced with other vegetation that is equally effective in retarding runoff, preventing erosion and filtering nonpoint source pollution from runoff.
- ii. Any access path in the buffer area shall be constructed and surfaced so as to effectively control erosion.
- iii. Dead and diseased trees or shrubbery may be removed only by specific permit or as part of a management plan clearly delineating replanting or regenerative actions to be employed.
- iv. For shoreline erosion control projects, trees and woody vegetation may be removed, necessary control techniques employed, and appropriate vegetation established to protect or stabilize the shoreline in accordance with the best available technical advice as approved by the division of environmental affairs and applicable permit conditions or requirements.

When trees are destroyed or damaged beyond recovery in violation of this subsection, the Director may require that they be replaced on the basis of one tree with a minimum 2.5 inches in caliper for every 2.5 inches diameter of tree destroyed or damaged.

- (a) (10) Nothing in this section shall be construed to exempt any person from the requirements of obtaining any additional permits as may be required by law.

Section 2:- That the Code of the City of Norfolk, Virginia 1979, is hereby amended by adding certain language in the introductory paragraph of Section 30-26, relating to safeguarding trees during construction, reading as follows:

30-26. Construction; Safeguarding of Trees.

For the purposes of safeguarding trees on public property and in buffer areas of the Resource Protection Area (as defined and described in Section 494 of the Zoning Ordinance) during construction, including cable installations and excavations, the following conditions shall apply to all trees other than trees for which a removal permit has been issued:

. . . .

Section 3:- That this ordinance shall be in effect from and after September 20, 1990.

Adopted by Council August 28, 1990  
Effective September 20, 1990

TRUE COPY  
TESTE:

\_\_\_\_\_  
R. BRECKENRIDGE DAUGHTREY, CITY CLERK

BY: \_\_\_\_\_  
DEPUTY CITY CLERK



Form and Correctness Approved:

By Cynthia B. Hall  
Office of the City Attorney

Contents Approved:

By [Signature]  
DEPT. Public Works

NORFOLK, VIRGINIA

**PH-1E**

**ORDINANCE No. 36,175**

AN ORDINANCE TO AMEND THE CODE OF THE CITY OF NORFOLK, VIRGINIA, 1979, BY ADDING ONE NEW SECTION NUMBERED 42-20.3, UNDER CHAPTER 42 OF THE CITY CODE RELATING TO FILL PERMITS IN CHESAPEAKE BAY PRESERVATION AREAS, SO AS TO IMPLEMENT THE CHESAPEAKE BAY PRESERVATION ACT REQUIREMENTS.

BE IT ORDAINED by the Council of the City of Norfolk:

Section 1:- That the Code of the City of Norfolk, Virginia, 1979, is hereby amended by adding thereto under Chapter 42, relating to fill permits in Chesapeake Bay Preservation Areas, one new section numbered and reading as follows:

**Sec. 42-20.3. Filling of Chesapeake Bay Preservation Areas.**

(a) Before any filling, clearing or grading is done by the owner, or by any other person with the knowledge or consent of the owner, of any area designated pursuant to section 494 of the zoning ordinance as a Chesapeake Bay Preservation Area, a fill plan shall be submitted to the director of public works. The fill plan shall be reviewed by the department of public works and by the division of environmental affairs to ensure consistency with the provisions of this section and of section 494 of the zoning ordinance. Upon approval of the fill plan by the department of public works and the division of environmental affairs the filling, clearing or grading shall be done in accordance therewith.

(b) For purposes of this section, the fill plan shall include:

- (1) A survey drawn to scale, certified as complete and accurate by a professional engineer or a certified land surveyor, which clearly delineates:
  - a. the existing topography of the area proposed to be filled, cleared or graded shown by contour lines;
  - b. the tidal wetlands, tidal shores, nontidal wetlands connected by surface flow and contiguous to tidal wetlands and tributary streams, and a 100 foot buffer located adjacent to and landward of the components listed above;

- c. the location, elevation, extent, and type of proposed fill, clearing or grading shown by contour lines and total fill and disturbed area calculations; and
  - d. the location of natural drainage areas which would or could be obstructed by the fill.
- (2) Appropriate erosion and sedimentation control procedures as required by chapter 15 of the city code.
  - (3) A showing of all wetlands permits required by law.
  - (4) A description of the purpose and necessity of the filling, clearing or grading. If the filling, clearing or grading results in over 2,500 square feet of land disturbance or land disturbing activity as defined in section 32.2-3 of the city code, and is done as part of development or redevelopment as defined in section 32.2-3 of the city code, the owner shall follow the appropriate procedures as detailed in article 3 of chapter 32.2 of the city code.
  - (5) If trees or other vegetation are to be removed in the buffer area of the resource protection area as defined in section 32.2-3 of the city code in order to fill, clear or grade, a showing of all necessary tree permits pursuant to section 30-24(a)(9) of the city code is required.
  - (6) Any additional information or data the director of public works or the division of environmental affairs requests to complete their review of the fill plan.
  - (c) Upon the approval of a fill plan under this section and the completion of the work thereunder, the owner of the land shall thereafter maintain the drainage in such condition as to allow the free flow of water through it in an unobstructed manner. If the drainage becomes obstructed, the owner shall submit a plan to the director of public works for reopening it.
  - (d) Any person violating any provision of this section shall be guilty of a class 3 misdemeanor. Each day that drainage is obstructed shall constitute a separate offense. If the owner or any other person with the knowledge or consent of the owner fails to



carry out the filling, clearing or grading within the terms and conditions set forth in the approved fill plan, the director of public works shall revoke the same and take such action as is appropriate to remedy or restore the area affected. In addition to any penalty imposed for each violation, a judge hearing the case may direct the person responsible for the improper filling, clearing or grading to remove such material and/or restore the area, and each day's default in such removal or restoration shall constitute a violation of and a separate offense under this section.

Section 2:- That this ordinance shall be in effect from and after September 20, 1990.

Adopted by Council August 28, 1990  
Effective September 20, 1990

TRUE COPY  
TESTE:

\_\_\_\_\_  
R. BRECKENRIDGE DAUGHTREY, CITY CLERK

BY: \_\_\_\_\_  
DEPUTY CITY CLERK

Form and Correctness Approved:

By Cynthia R. Huff  
Office of the City Attorney

Contents Approved:

By Valerie Stalls  
DEPT. Public Health

NORFOLK, VIRGINIA

**PH-1F**

**ORDINANCE No. 36,176**

AN ORDINANCE TO AMEND THE CODE OF THE CITY OF NORFOLK, VIRGINIA, 1979, BY INSERTING A NEW CHAPTER, NUMBERED 39.2 ENTITLED "SEWER USE-PRIVATE."

- - -

BE IT ORDAINED by the Council of the City of Norfolk:

Section 1:- That the Code of the City of Norfolk, Virginia, 1979, is hereby amended by inserting a new chapter, numbered 39.2, entitled "Sewer Use-Private," reading as follows:

Chapter 39.2

SEWER USE-PRIVATE

Sec. 39.2-1. Violations of article.

Any person violating any provision of this chapter shall be guilty of a class 3 misdemeanor. Each day's continuance of such violation shall constitute a separate offense. This chapter shall be enforced by the department of health.

Sec. 39.2-2. Adoption.

The Commonwealth of Virginia, State Board of Health, Sewage Handling and Disposal Regulations, 1988, as amended, and as hereinafter supplemented in this chapter, are hereby adopted as the private sewer disposal regulations for the City of Norfolk. A copy of the regulations shall be kept on file at all times in the offices of the city clerk and the department of health.

Sec. 39.2-3. Design standards; drainage easements.

The permit required by the regulations shall specify the design standards for the septic tank or other system, such as tank size, length of drainfield, location of tank, drainfield and well, where applicable, and such other facilities as may be required under rules and criteria of the health department. A reserve sewage disposal site with a capacity at least equal to that of the primary sewage disposal site shall be provided. This requirement shall not apply to any lot or parcel recorded prior to October 1, 1989, if such lot or parcel is not sufficient in capacity to accommodate a reserve sewage disposal site, as determined by the health department. Building or construction of any impervious surface shall be prohibited on the area of all sewage disposal sites. Where



grading and drainage improvements are required under rules and criteria of the health department, the permit shall so stipulate. The director of the department of health shall require such drainage easements and other assurances as he deems adequate to guarantee the perpetual maintenance of such drainage improvements.

**Sec. 39.2-4. Maintenance.**

All on-site sewage disposal systems not requiring a Virginia Pollution Discharge Elimination System (VPDES) permit shall be pumped out at least once every five years in accordance with state and local law and Hampton Roads Sanitation District requirements. It shall be unlawful for any person to fail, neglect or refuse to maintain or cause to be maintained any septic tank or other sewage disposal system, including associated drainage improvements, in the manner specified in the permit issued under this article and in a manner satisfactory to the director of the health department. All duties and responsibilities of any person for whose property a permit is issued under this article shall be binding upon any and all subsequent owners of such property for as long as the septic tank or sewage disposal system remains in service.

**Sec. 39.2-5. Unlawful sewage discharges.**

(a) It shall be unlawful for any person in any manner to discharge, cause to be discharged or allow to be discharged, or allow or cause to accumulate any sewage, as defined in the regulations, on any public or private property within the city.

(b) It shall be the duty of the director of the department of health or his authorized agent to direct, by written notice, the person who is responsible for the discharge or accumulation, the owner, agent, or occupant, to cause such matter to be removed, or the conditions corrected, on such property within 48 hours.

**Sec. 39.2-6. Correction of violation.**

If, upon any inspection, the director of the health department or his authorized agent shall find any violation of this article or the provisions of the permit issued under it, he shall direct the person to whom the permit was issued, by written notice, to make the necessary corrections, within such reasonable time as shall be specified therein. When it comes to the knowledge of the director of the health department that any sewage system is causing an offensive or unwholesome condition, the director shall serve notice upon the owner of the property, the person who created or

maintained the offensive or unwholesome condition, or the occupant of the land or premises, to cause the offensive or unwholesome condition to be abated in conformance with Sections 27-4 through 27-6 of the City Code.

Section 2:- That this ordinance shall be in effect from and after its adoption.

Adopted by Council August 28, 1990  
Effective August 28, 1990

TRUE COPY

TESTE:

\_\_\_\_\_  
R. BRECKENRIDGE DAUGHTREY, CITY CLERK

BY:

\_\_\_\_\_  
DEPUTY CITY CLERK



Form and Correctness Approved:

By Cynthia B. Hall  
Office of the City Attorney

Contents Approved:

By [Signature]  
DEPT. Public Works

NORFOLK, VIRGINIA

**R-11****ORDINANCE No. 36,187**

AN ORDINANCE TO AMEND THE CODE OF THE CITY OF NORFOLK, VIRGINIA, 1979, BY ADDING TWO NEW SECTIONS NUMBERED 42-20.1 AND 42-20.2 UNDER CHAPTER 42 OF THE CITY CODE, RELATING TO FILL PERMITS.

BE IT ORDAINED by the Council of the City of Norfolk:

Section 1:- That the Code of the City of Norfolk is hereby amended by adding thereto under Chapter 42, relating to fill permits, two new sections numbered and reading as follows:

**Sec. 42-20.1. Obstructing gutters or drains generally.**

It shall be unlawful for any person to throw, place or deposit, or cause to be thrown, placed or deposited, in any gutter, ditch, storm drain or other drainage area in the city, anything that impedes or interferes with the free flow of water therein. Any person violating the provisions of this section shall be guilty of a Class 3 misdemeanor and each day that the free flow of water is impeded or interfered with shall constitute a separate offense. In addition to any penalty imposed for each violation, a judge hearing the case may direct the person responsible for the obstruction to remove the obstruction and each day's default in removal of the obstruction shall constitute a violation of a separate offense under this section.

**Sec. 42-20.2. Obstructing natural drain by filling or grading areas.**

(a) Before any filling or grading is done by the owner, or by any other person with the knowledge and consent of the owner, of any area in the city, which could or would obstruct a natural drain, a plan for the necessary drainage shall be submitted to the director of public works. Upon approval of any plan by the director of public works or his designee, the filling or grading shall be done in accordance therewith.

(b) For purposes of this section, the fill plan shall include:

- (1) A survey drawn to scale, certified as complete and accurate by a professional engineer or a certified land surveyor, which clearly delineates:

- a. the existing topography of the area proposed to be filled or graded shown by contour lines;
  - b. the location, elevation, extent, and type of proposed fill or grading shown by contour lines and total fill and disturbed area calculations; and
  - c. the location of natural drainage areas which would or could be obstructed by the fill.
- (2) Appropriate erosion and sedimentation control procedures as required by chapter 15 of the city code.
  - (3) A description of the purpose and necessity of the filling or grading.
  - (4) Any additional information or data the director of public works or his designee requests to complete their review of the fill plan.

(c) Upon the approval of a plan under this section and the completion of the work thereunder, the owner of the land shall thereafter maintain the drainage in such condition as to allow the free flow of water through it in an unobstructed manner and, should this drainage become obstructed, his plan for reopening it must be approved by the director of public works or his designee.

(d) Any person violating any provision of this section shall be guilty of a Class 3 misdemeanor, and each day that such natural drainage shall be obstructed shall constitute a separate offense. If the owner or any other person with the knowledge and consent of the owner fails to carry out the filling within the terms and conditions set forth in the approved fill plan, the director of public works shall revoke the same and take such action as is appropriate to remedy or restore the area affected. In addition to any penalty imposed for each violation, a judge hearing the case may direct the person responsible for the improper filling to remove such material and/or restore the area, and each day's default in such removal or restoration shall constitute a violation of and a separate offense under this section.

Section 2:- That this ordinance shall be in effect from and after September 20, 1990.

Adopted by Council August 28, 1990  
Effective September 20, 1990

TRUE COPY  
TESTE:

P. BRECHENBRIDGE BAUGHTREY CITY CLERK



Appendix C - Calculation of Default Pollutant Loadings

## Appendix C

### STUDY OF THE AVERAGE TOTAL PHOSPHORUS LOADING FOR THE CITY OF NORFOLK

The Chesapeake Bay Preservation Area Designation and Management Regulations require localities to establish Resource Protection Areas (RPAs) and Resource Management Areas (RMAs). The regulations include stormwater management criteria which apply to both RPAs and RMAs.

In accordance with the Chesapeake Bay Preservation Act and Regulations, "new development" must not increase pollutant loading above the pre-development levels. The pre-development loads are based on average land cover conditions. The Chesapeake Bay Local Assistance Department (CBLAD) has determined that the average land cover condition for the entire Virginia Tidewater region produces a phosphorus loading of 0.45 pounds/acre/year which is equivalent to an impervious cover of 16 percent. This pollutant loading and percent impervious cover is equivalent to 1.5 units per acre residential density.

The Chesapeake Bay Local Assistance Department has suggested two options for localities to determine the appropriate benchmark pollutant loading rate.

1. Designate watersheds within the jurisdiction and calculate the average total phosphorus loading and equivalent impervious cover for each individual watershed, or
2. Declare the jurisdiction as part of Virginia's Chesapeake Bay watershed with an average total phosphorus loading of 0.45 pounds/acre/year.

This study considers two alternatives for the City of Norfolk under the first option:

1. The City was divided into four watersheds, according to the Master Storm Drainage plans. Those watersheds were: Lafayette River, Elizabeth River, Chesapeake Bay and Lakes.
2. The entire City was considered as a single watershed with an average phosphorus loading.



The data used for the task is based on the City's land use file which is updated annually. The land use file lists numbers of residential units per acre and land use in acres.

Land use is divided into 9 categories:

- Residential
- Motel
- Manufacturing
- Transportation
- Commercial
- Public
- School and Parks
- Vacant
- Right of Way

The number of units per acre was calculated for each statistical area. The residential land use category was divided into 13 subcategories based on units per acre. Impervious percent and phosphorus load was determined according to Table B-1 of the CBLAD draft calculation procedure. The same table was used to define phosphorus loading for the rest of the land use categories. The phosphorus loads for the nine land use categories are presented in attached Table 2.

Total phosphorus loads were summarized and average loads were calculated for the four city watersheds. Corresponding values for percent impervious were established for each watershed.

As a second alternative the average value of phosphorus loading was calculated for the entire City of Norfolk as for individual watersheds. Results of the study are presented in Table 1.

The following three options were identified for establishing a benchmark phosphorus loading for new development:

1. Establish phosphorus loads for the four City watersheds as they are represented in Table 1.
2. Establish a single phosphorus loading of 1.23 pounds/acre/year for the entire City.
3. Adopt the phosphorus loading of .45 pounds/acre/year suggested by the CBLAD.

After consideration of the environmental, technical, and administrative factors it is recommended to use the phosphorus loading of 1.23 pounds/acre/year for the entire City.

TABLE 1 - POLLUTANT LOADINGS BY WATERSHED

WATERSHEDS	% IMPERVIOUS	BENCHMARK LOAD lbs/ac/yr	AREA ac	TOTAL LOAD lbs/yr
LAFAYETTE RIVER	50	1.16	8,752	10,147
ELIZABETH RIVER	59	1.36	10,303	14,039
CHESAPEAKE BAY	47	1.11	6,141	6,805
LAKES	52	1.21	4,181	5,055
MEAN FOR THE CITY	53	1.23	29,377	36,046



TABLE 2  
ANNUAL STORM POLLUTANT EXPORT

LAND USE	%	NUMBER OF DWELLING UNITS PER ACRE	TOTAL (1) PHOSPHORUS lbs/ac/yr
RESIDENTIAL	10	1	0.33
Single family, multi-	15	1.5	0.43
family, group	16	1.5	0.45
quarters (dormitories,	20	2 - 3	0.53
retirement homes,	25	4 - 5	0.64
military quarters, etc)	30	6 - 7	0.75
and mobile home parks.	35	8 - 9	0.85
	40	10 - 11	0.96
	45	12 - 13	1.06
	50	14 - 15	1.17
	55	16 - 17	1.27
	60	18 - 20	1.38
	65	21 - 150	1.48
HOTEL / MOTEL	90		2.01
MANUFACTURING	80		1.80
Various manufacturing, construction, warehousing, petroleum refining, etc.			
TRANSPORTATION	85		1.90
Rail, motor vehicle, air, marine, utilities, parking, communications, etc.			
COMMERCIAL	85		1.90
Wholesale, retail, office, etc.			
PUBLIC (2)	75		1.69
Federal, state and local institutions.			
SCHOOL AND PARKS	30		0.75
Educational facilities, cultural activities, amusements, recreation, parks, cemeteries, etc.			
VACANT	23		0.59
ROW	80		1.80

Notes: (1) Based on Table B-1 of the CBLAD draft NPS Calculation Procedure.

(2) Does not include military bases, etc.

TABLE 3

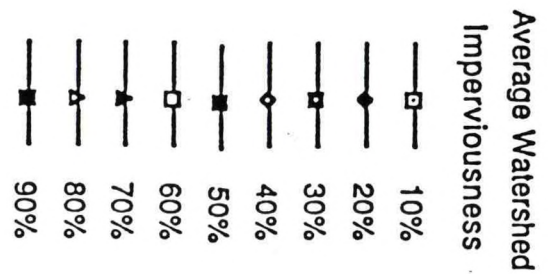
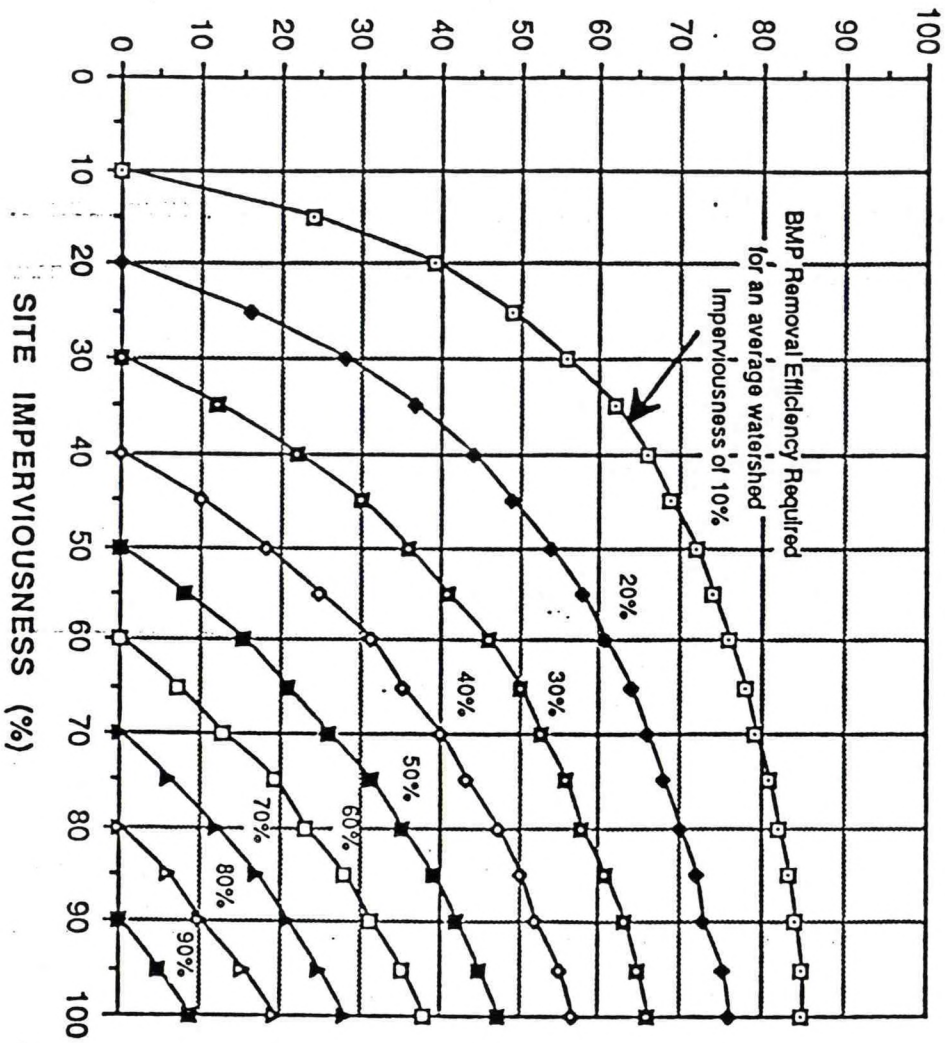
## CITY OF NORFOLK WATERSHEDS AND LAND USES

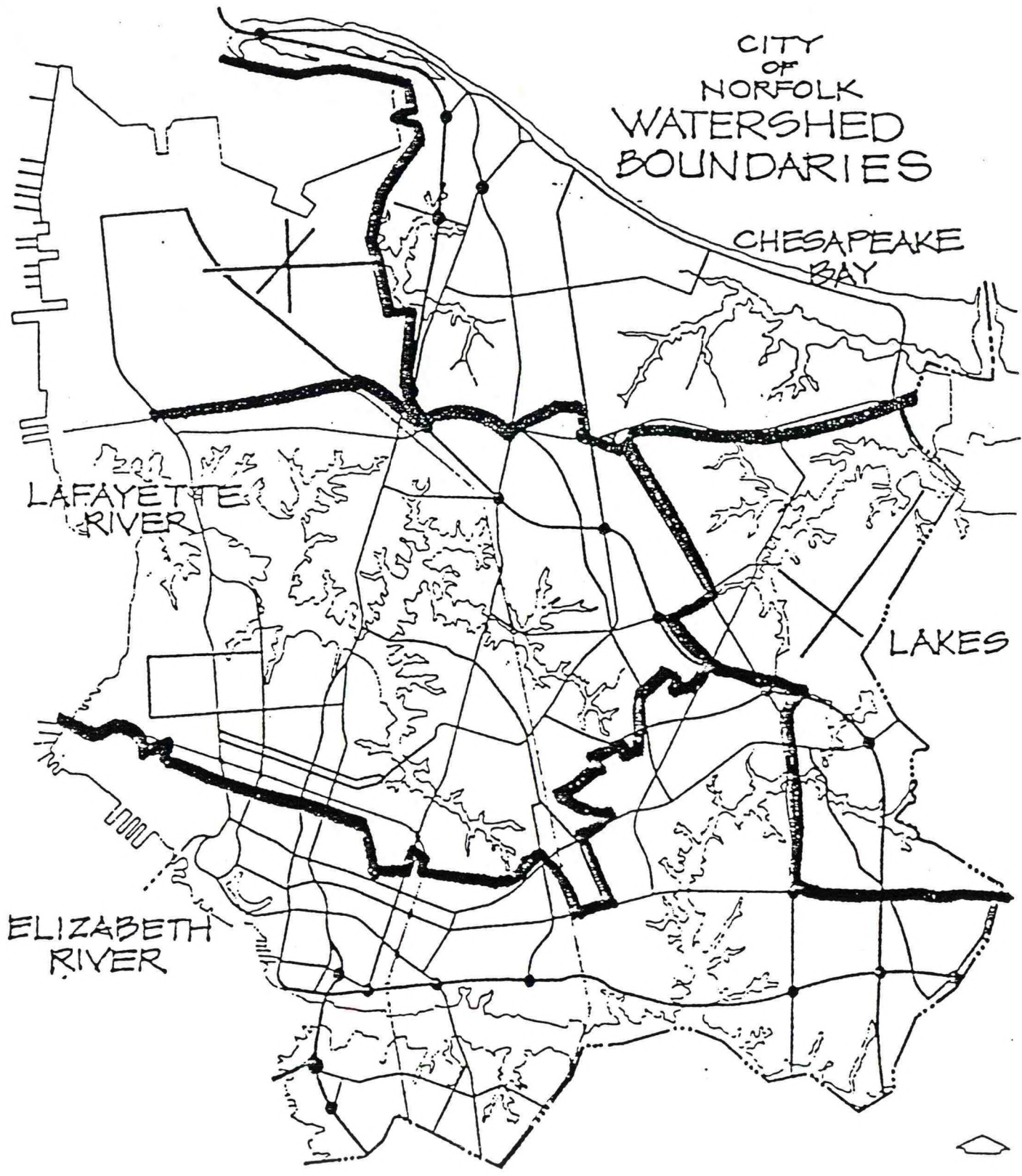
LAND USES	LAFAYETTE RIVER		ELIZABETH RIVER		CHESAPEAKE BAY		LAKES		TOTAL	
	ac	%	ac	%	ac	%	ac	%	ac	%
Residential	4532	51.8	2757	26.8	3293	53.6	1238	29.6	11952	40.3
Hotel	8	0.1	48	0.5	37	0.6	41	1.0	135	0.5
Manufacturing	149	1.7	785	7.6	40	0.7	6	0.1	990	3.3
Transportation	342	3.9	1039	10.1	71	1.2	916	21.9	2383	8.0
Commercial	558	6.4	1427	13.8	233	3.8	285	6.8	2526	8.5
Public	26	0.3	276	2.7	348	5.7	4	0.1	663	2.2
Schools & Parks	781	8.9	1030	10.0	615	10.0	735	17.6	3191	10.8
Vacant	366	4.2	878	8.5	345	5.6	337	8.1	1944	6.5
Right of Way	1990	22.7	2064	20.0	1158	18.9	620	14.8	5893	19.9
Total	8752	100	10303	100	6141	100	4181	100	29676	100



REMOVAL EFFICIENCY NEEDED FOR NEW DEVELOPMENT (%)

REQUIRED BMP REMOVAL EFFICIENCIES FOR NEW DEVELOPMENT





CITY  
OF  
NORFOLK  
WATERSHED  
BOUNDARIES

CHESAPEAKE  
BAY

LAFAYETTE  
RIVER

LAKES

ELIZABETH  
RIVER